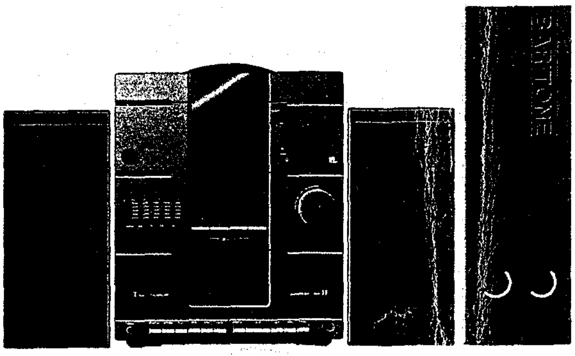
# Midi System FW2012

/20/21/25/28/30/37

Service
Service
**Service**



# Service Manual

For repair information of the cassette mechanism see Service Manual of Tape transport RDN/RDR General documentation and Tape transport RDN7.

COMPACT
disc
DIGITAL AUDIO

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Ⓢ
Osynlig laserstrålning när denna del är öppnad är urkopplad. Betrakta ej strålen.

(SF)
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Alä katso säteeseen.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

**CLASS 1**
**LASER PRODUCT**
3122 110 03420

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PHILIPS

PHILIPS

# CONNECTIONS AND CONTROLS

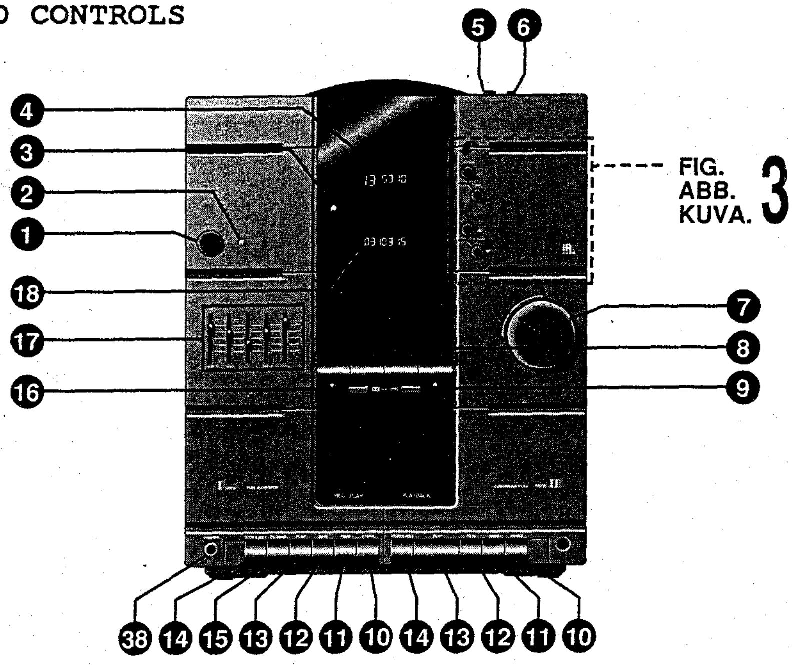

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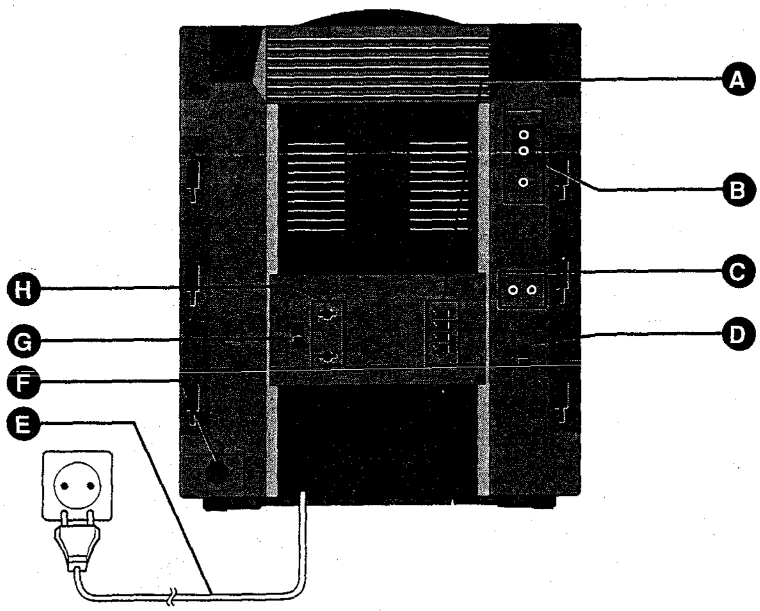
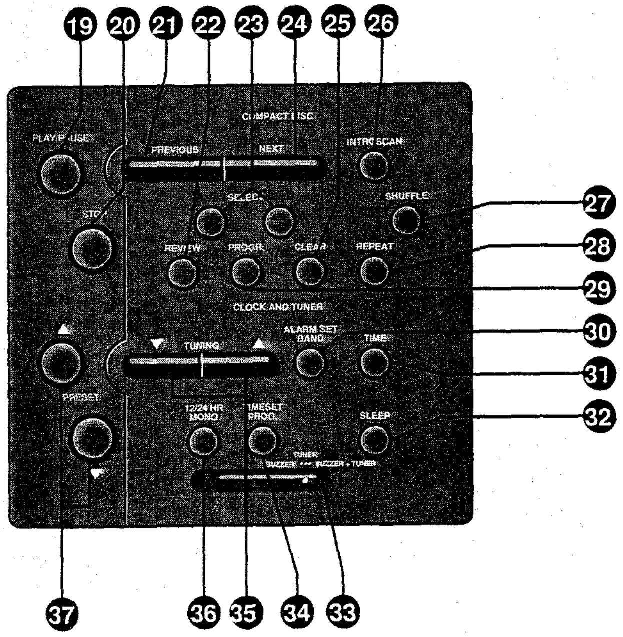
FIG.
ABB.
KUVA. 3





19
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22
23
24
25
26
COMPACT DISC
PLAY/PAUSE
PREVIOUS
NEXT
INTRO SCAN
SELECT
SHUFFLE
STOP
REVIEW
PROGR.
CLEAR
REPEAT
27
28
29
CLOCK AND TUNER
ALARM SET
BAND
TIME
TUNING
30
31
PRESET
12/24 HR
MONO
TIMESET
PROG.
SLEEP
32
TUNER
BUZZER
BUZZER + TUNER
37
36
35
34
33

FIG.
ABB.
KUVA. 3

| | | |
|---|---|---|
| 1 | Power Switch | 1264 |
| 2 | Alarm LED | 6437 |
| 3 | IR Infra Red Sensor | 6420 |
| 4 | CD Display | 1900 |
| 5 | CD Open/Close | 1913 |
| 6 | Alarm On/Off | 1410 |
| 7 | Volume Control | 3500 |
| 8 | Mode Selector | |
| 9 | Dolby NR/Indicator | 1411/6439 |
| 10 | Pause | |
| 11 | Forward | |
| 12 | Rewind | |
| 13 | Play | |
| 14 | Stop/Eject | |
| 15 | Record | |
| 16 | Subwoofer/Indicator | 1416/6438 |
| 17 | Subwoofer Control | 3505 |
| | Graphic Equalizer | 3507,3509<br>3511,3513 |
| 18 | Mode And Clock Display | 1400 |
| 19 | Play/Pause | 1909 |
| 20 | Stop | 1910 |
| 21 | Previous | 1911 |
| 22 | Review | 1904 |
| 23 | Select Up/Down | 1901,1905 |
| 24 | Next | 1912 |
| 25 | Clear | 1902 |
| 26 | Introscan | 1906 |
| 27 | Shuffle | 1908 |
| 28 | Repeat | 1907 |
| 29 | Program | 1903 |
| 30 | Alarm Set/Band Selector | 1404 |
| 31 | Time | 1405 |
| 32 | Sleep | 1409 |
| 33 | Alarm Mode | 1421 |
| 34 | Time Setting | 1408 |
| 35 | Tuning Up/Down | 1402/1403 |
| 36 | 12/24 Hr, Mono/Stereo | 1407 |
| 37 | Preset Up/Down | 1401/1406 |
| 38 | Headphone Socket | 1258 |
| A | Speaker Connection | 1200 |
| B | FM Aerial Socket | 1100 |
| @ | FM Aerial Socket | 1104 |
| C | Aux/TV Input | 1554 |
| D # | Grid Selector | 1105 |
| E | AC Mains Cord | |
| F | Subwoofer Output | 1265 |
| G # | Voltge Selector | 1025 |
| H | Not Applicable | |

# For -/21 only
@ For -/37 only

| ADJUSTMENT | CASSETTE | SK... | Recorder position DECK I | DECK II | MEASURE ON | READ ON | ADJUST WITH | ADJUST TO |
|---|---|---|---|---|---|---|---|---|
| Azimuth | 10KHz SBC 420* | Cass. | Play | - | 1258 | mV-meter | Left hand Screw Play head | Max.<br>L = R |
| | | Cass. | - | Play | 1258 | mV-meter | Left hand Screw R/P Head | |
| Motor speed (Normal) | 3150Hz SBC 420* | Cass. | Play | - | 1258 | Wow and Flutter meter | preset in motor | ** a |
| | | Cass. | - | Play | 1258 | Wow and Flutter meter | - | |
| Motor speed (high) | 3150Hz SBC 420* | Cass. HSD | Record | Play | 1258 | Frequency counter | - | 6.0KHz ± 0.3KHz |

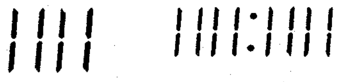
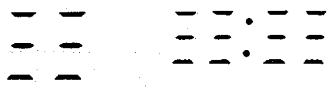
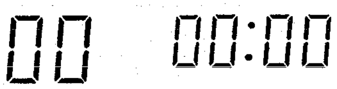
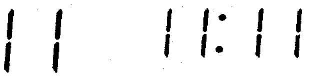
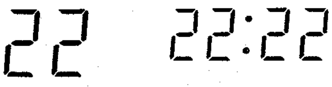
* SBC 420 : 4822 397 30071

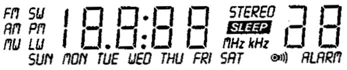
** a The maximum permissible speed deviation is 2%.
Moreover, the wow and flutter value can be read.
This value should not exceed 0.35%.

## SERVICE TEST PROGRAMME

Testprogramme 1 can test the following:
- CD Display
- Radial arm and amplifier
- Turntable motor
- Focus servo
- Tracking servo

Testprogramme 2 checks the following:
- Tuner display
- Check and adjust the clock oscillator
- Load service frequencies into the EEROM of the µProcessor

| Operating sequence | Display shows | Remarks |
|---|---|---|
| CD door closed.<br>To start the **Service testprogramme 1** set funtion to "Cass" or "Tuner". Hold "Select ▲" and "Select ▼" down and turn the set to "Cd", **Step 1** of testprogramme is reached. |  | The radial arm is now in the centre of the mechanism. |
| Press "Previous" |  | The radial arm will be moved outward. |
| Press "Select ▼" | | The CD door opens. |
| Press "Select ▲" | | The CD door closes. |
| Press "Play to reach **Step 2** |  | The laser is switched on and the lens moves up and down. |
| Press "Previous" | | The turntable turns counter clockwise. |
| Insert a disc and press "Next" |  | The turntable turns clockwise, focus will be achieved and the motor stays running. |
| Press "Stop" to return to step 1. | | |
| Press "Play" |  | The radial control is switched on and tracking occurs. |
| Press "Previous" | | The arm jump-track backward. |
| Press"Next" | | Subcode will be read followed by jump-track forward. |
| Press "Stop" to return to step 1 or Power off to interrupt testprogramme. | | |

| **Operating sequence** | **Display shows** | **Remarks** |
|---|---|---|
| To start **Service testprogramme 2** hold "Preset up" and "Program" buttons down while Power on. |  FM SW AM PM MW LW<br>STEREO SLEEP MHz kHz<br>SUN MON TUE WED THU FRI SAT ALARM | The display will turn off once the two buttons are released.<br>Frequency of clock oscillator can now be checked or adjusted:<br>* measure on pin 18 of μProcessor<br>* adjust frequency to 32Hz ± 0.0005Hz (31.25ms ± 0.5μs) with 2412. |
| Press "Preset up"<br>Press "CD", "Add", "CASS", "Time", "Sleep" or "Tuner". | Display shows "Cd", "Add", "CASS", clock time, sleep time or tuner bandwave and frequency accordingly. | The clock display is in fast mode. |
| The μP is now loaded with frequencies as shown in the table below. | | The Service testprogramme can be interrupted by Power off |

| **Preset** | **FM** | **FM(POL)** | **FM(USA)** | **SW** | **MW** | **MW(USA)** | **LW** |
|---|---|---|---|---|---|---|---|
| 0 | 87.50 | 65.00 | 87.50 | | | | |
| 1 | 97.00 | 67.50 | 97.00 | | | | |
| 2 | 98.00 | 70.00 | 98.00 | | | | |
| 3 | 99.00 | 72.00 | 106.00 | | | | |
| 4 | 108.00 | 74.00 | 108.00 | | | | |
| 5 | | | | | 522 | 530 | |
| 6 | | | | | 558 | 560 | |
| 7 | | | | | 603 | 620 | |
| 8 | | | | | 999 | 1000 | |
| 9 | | | | | 1494 | 1600 | |
| 10 | | | | | 1611 | 1700 | |
| 11 | | | | | | | 148 |
| 12 | | | | | | | 155 |
| 13 | | | | | | | 200 |
| 14 | | | | | | | 275 |
| 15 | | | | | | | 284 |
| 16 | | | | 3.820 | | | |
| 17 | | | | 3.900 | | | |
| 18 | | | | 11.900 | | | |
| 19 | | | | 12.100 | | | |
| **UNITS** | **MHz** | **MHz** | **MHz** | **MHz** | **kHz** | **kHz** | **kHz** |

| | | | | |
|---|---|---|---|---|
| ▲ | Carbon film<br>0.2 W CR16 | 70° C | 5% |
| □ | Carbon film<br>0.33 W CR25 | 70° C | 5% |
| ● | Carbon film<br>0.5 W CR37 | 70° C | 5% |
| ○ | Standard film<br>0.5 W SFR16T | 70° C | 5% |
| ■ | Standard film<br>0.4 W SFR25 | 70° C | 5% |
| □ | Metal film<br>0.6 W MRS25 | 70° C | 5% |
| | Safety resistor | | |
| Ⓒ | Chip component | | |

| | | |
|---|---|---|
| △△ | Plate ceramic<br>Tuning < 120 pF<br>Others | <br>2%<br>—20/+80% |
| ■▲ | Tubular ceramic | |
| ○△ | Polystyrene film / foil | 1% |
| ●● | Polyestor Film / foil | 10% |
| ○□ | Mylar | 10% |
| ○ * | Electrolytic | |

*a = 2,5 V
b = 4 V
c = 6,3 V
d = 10 V
e = 16 V
f = 25 V
g = 40 V
h = 63 V
j = 100 V
l = 125 V
m = 150 V
n = 160 V
q = 200 V
r = 250 V
s = 300 V
t = 350 V
u = 400 V
v = 500 V
w = 630 V
x = 1000 V
A = 1,6 V
B = 6 V
C = 12 V
D = 15 V
E = 20 V
F = 35 V
G = 50 V
H = 75 V
I = 80 V

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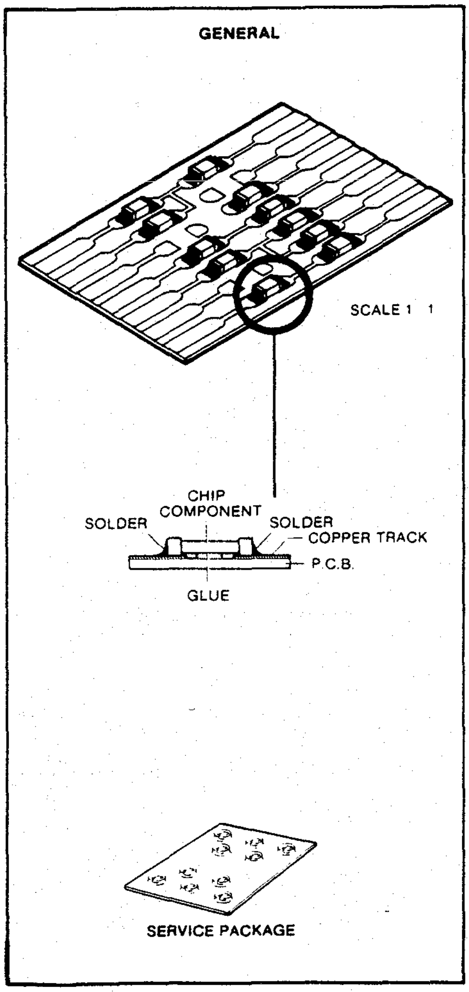
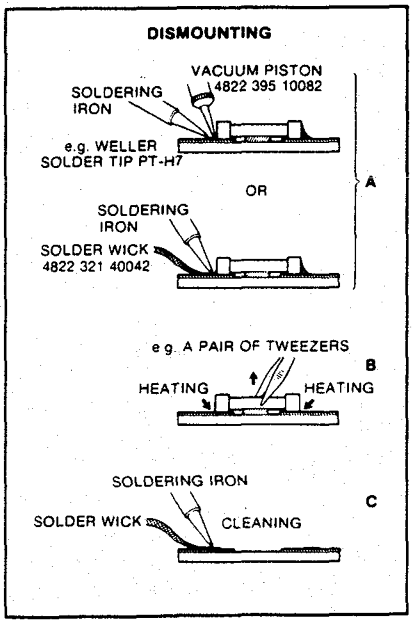
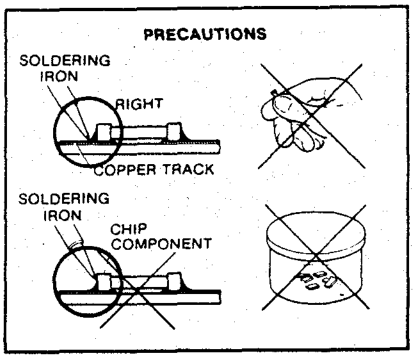
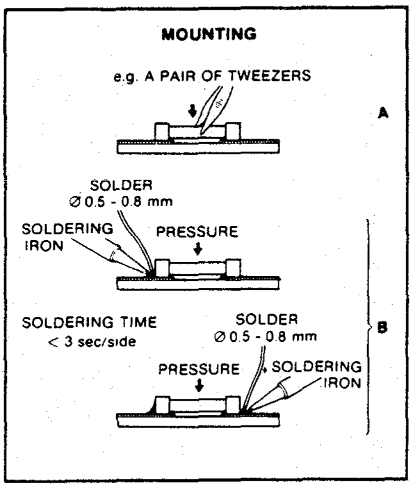
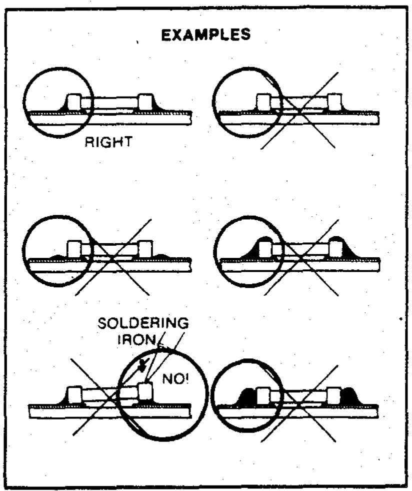
## HANDLING CHIP COMPONENTS


GENERAL
SCALE 1 : 1
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING IRON
e.g. WELLER SOLDER TIP PT-H7
OR
A
SOLDERING IRON
SOLDER WICK
4822 321 40042
e.g. A PAIR OF TWEEZERS
B
HEATING
HEATING
SOLDERING IRON
C
SOLDER WICK
CLEANING


PRECAUTIONS
SOLDERING IRON
RIGHT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT


MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
Ø 0.5 - 0.8 mm
SOLDERING IRON
PRESSURE
SOLDERING TIME
< 3 sec/side
SOLDER
Ø 0.5 - 0.8 mm
B
PRESSURE
SOLDERING IRON


EXAMPLES
RIGHT
SOLDERING IRON
NO!

27 012C12

## SPECIFICATIONS

### GENERAL

| | | |
|---|---|---|
| Mains voltage | | 120V - 220V - 240V<br>120V - 220V for -/21 only |
| Mains selection/setting | | Serviceable<br>Set at 120V for -/37<br>Set at 220V for -/20/28<br>Set at 240V for -/25/30 |
| | | Switchable<br>Set at 220V for -/21 |
| Mains frequency | | 50Hz - 60Hz |
| Backup battery | | 4.5V (R6 x 3) |
| Power consumption | | 124W max. |
| Dimension centre unit | | 320 x 569 x 314 mm |

### TUNER : FM SECTION

| | | |
|---|---|---|
| Tuning range | | 87.5MHz - 108MHz |
| IF frequency | | 10.7MHz |
| Aerial input | | 75Ω coaxial<br>300Ω screw type for -/37 only |
| Sensitivity at 26dB S/N | | <5μV |
| Selectivity at 600kHz bandwidth | | >30dB |
| IF rejection | | >60dB |
| Image rejection | | >25dB |

### TUNER : AM SECTION

| | | |
|---|---|---|
| Tuning range | MW | 522kHz - 1611kHz |
| | MW | 530kHz - 1700kHz for -/37 only |
| | LW | 148kHz - 284kHz |
| IF frequency | | 450kHz |
| Grid frequency | | 9kHz<br>10kHz for -/37 only<br>Switchable:<br>9kHz - 10kHz for -/21 only |
| Sensitivity at 26dB S/N | MW | <3.0mV/M<br><1.7mV/M at 10kHz Grid |
| | LW | <4.0mV/M |
| Selectivity at 18kHz bandwidth | MW | >20dB<br>>28dB at 10kHz Grid |
| | LW | >28dB |
| IF rejection | MW | >26dB<br>>40dB at 10kHz Grid |
| | LW | >40dB |
| Image rejection | MW | >28dB<br>>30dB at 10kHz Grid |
| | LW | >34dB |

### AMPLIFIER

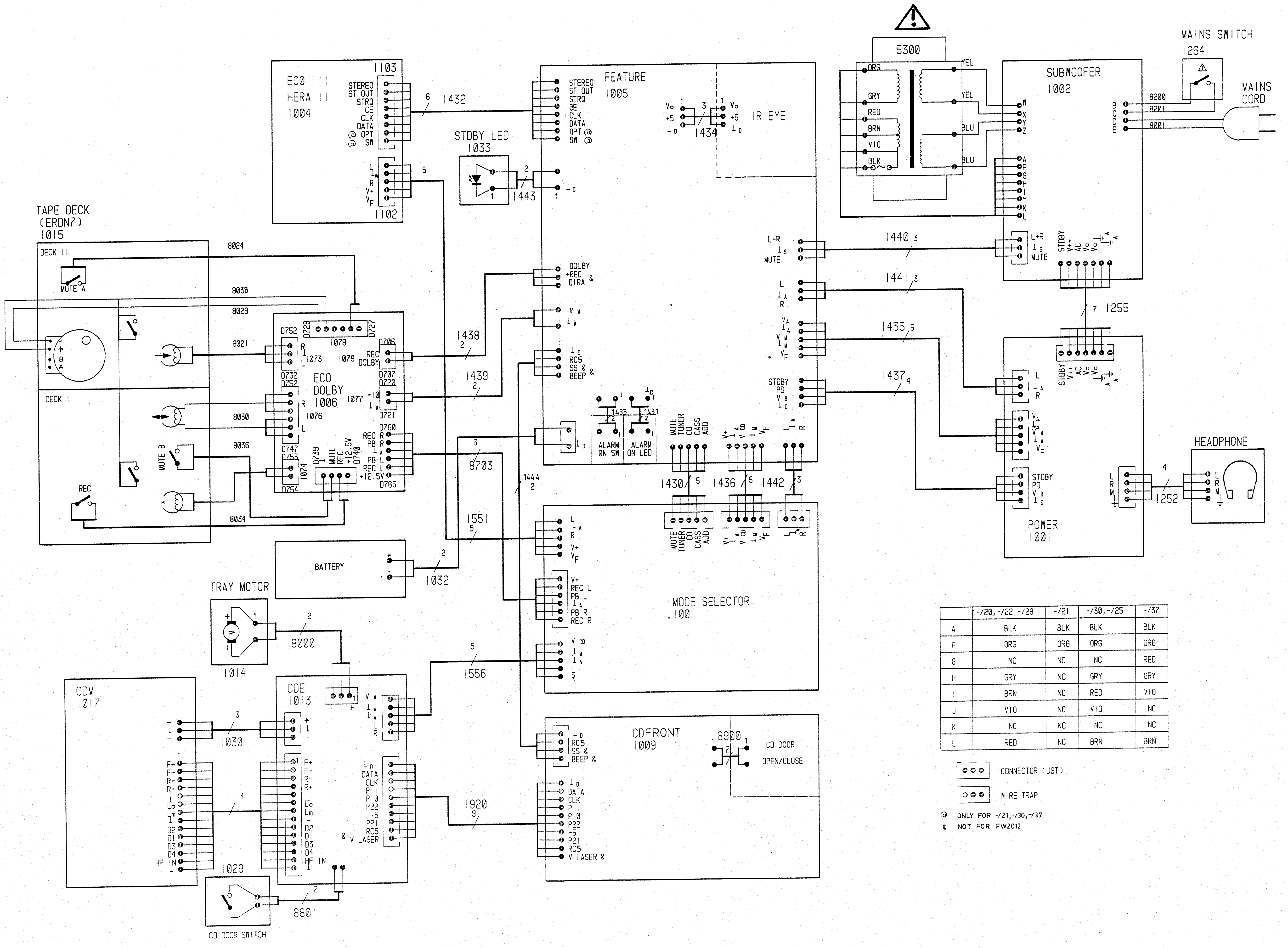
| | | |
|---|---|---|
| Output power at 10% distortion | | 2 x 15W -1dB L/R<br>1 x 10W -1dB Subwoofer |
| Speaker impedance | | 2 x 8Ω L/R<br>1 x 8Ω Subwooder<br>2 x 8Ω surround sound for -/37 only |
| Frequency response within -3dB | | 200Hz - 18kHz L/R<br>20Hz - 170Hz Subwoofer |
| Equalizer control | | -7dB to +7dB |
| Headphone output at 32Ω | | 30mW |
| Input sensitivity | Aux/TV | 400mV at 47kΩ |

### CASSETTE RECORDER

| | |
|---|---|
| Number of track | 2 x 2 stereo |
| Tape speed | 4.76 cm/sec ± 2% |
| Wow and flutter | <0.35% |
| Fast-wind time C60 | 130 sec |
| Bias system | 74kHz ± 6kHz |
| Recording playback frequency response within -7dB | 125Hz - 12.5kHz |
| Signal to noise ratio | >48dB |
| Noise reduction factor | 8.5dB (Dolby B) |

### COMPACT DISC

| | |
|---|---|
| Frequency response within +2dB/-4dB | 20Hz - 20kHz |
| Signal/Hiss ratio | >80dB |
| Distortion at 1kHz | <0.5% |
| Channel difference at 1kHz | <2dB |
| Channel crosstalk at 1kHz | >50dB |
| De-emphasis | 0 or 15/50 μS (Switched by subcode on the disc) |


5300
MAINS SWITCH
1264
MAINS CORD
SUBWOOFER
1002
ECO III
HERA II
1004
1103
1102
STEREO
ST OUT
STRO
CE
CLK
DATA
OPT
SW
6
1432
FEATURE
1005
IR EYE
1434
STDBY LED
1033
1443
TAPE DECK
(ERDN7)
1015
DECK II
DECK I
MUTE A
MUTE B
REC
8024
8038
8029
8021
8030
8036
8034
ECO DOLBY
1006
1073
1078
1079
1077
1076
1074
1438
1439
DOLBY
+REC &
DIRA
RC5
SS &
BEEP &
ALARM ON SW
ALARM ON LED
1433
1431
MUTE
TUNER
CD
CASS
ADD
1430
1436
1442
1440
1441
1435
1437
1255
STDBY
PD
POWER
1001
HEADPHONE
1252
8703
1444
1551
BATTERY
1032
MODE SELECTOR
.1001
TRAY MOTOR
1014
8000
1556
CDM
1017
CDE
1013
1030
1920
CDFRONT
1009
8900
CD DOOR
OPEN/CLOSE
1029
8801
CD DOOR SWITCH
V LASER &
HF IN
YEL
GRY
RED
BRN
VIO
BLK
BLU
ORG
8200
8201
8001

|  | -/20,-/22,-/28 | -/21 | -/30,-/25 | -/37 |
|---|---|---|---|---|
| A | BLK | BLK | BLK | BLK |
| F | ORG | ORG | ORG | ORG |
| G | NC | NC | NC | RED |
| H | GRY | NC | GRY | GRY |
| I | BRN | NC | RED | VIO |
| J | VIO | NC | VIO | NC |
| K | NC | NC | NC | NC |
| L | RED | NC | BRN | BRN |

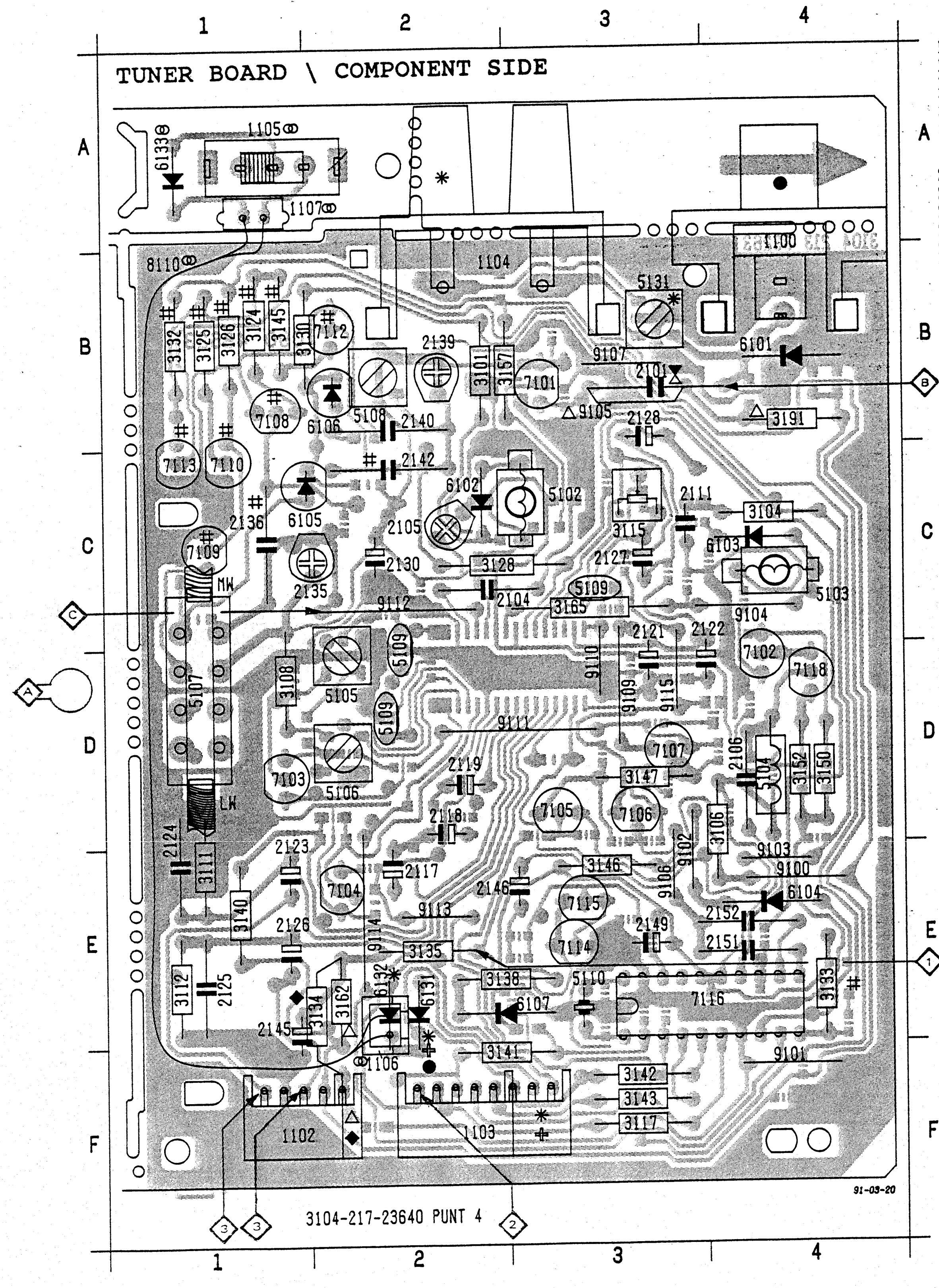
CONNECTOR (JST)

WIRE TRAP

@ ONLY FOR -/21,-/30,-/37

& NOT FOR FW2012

## TUNER BOARD \ COMPONENT SIDE

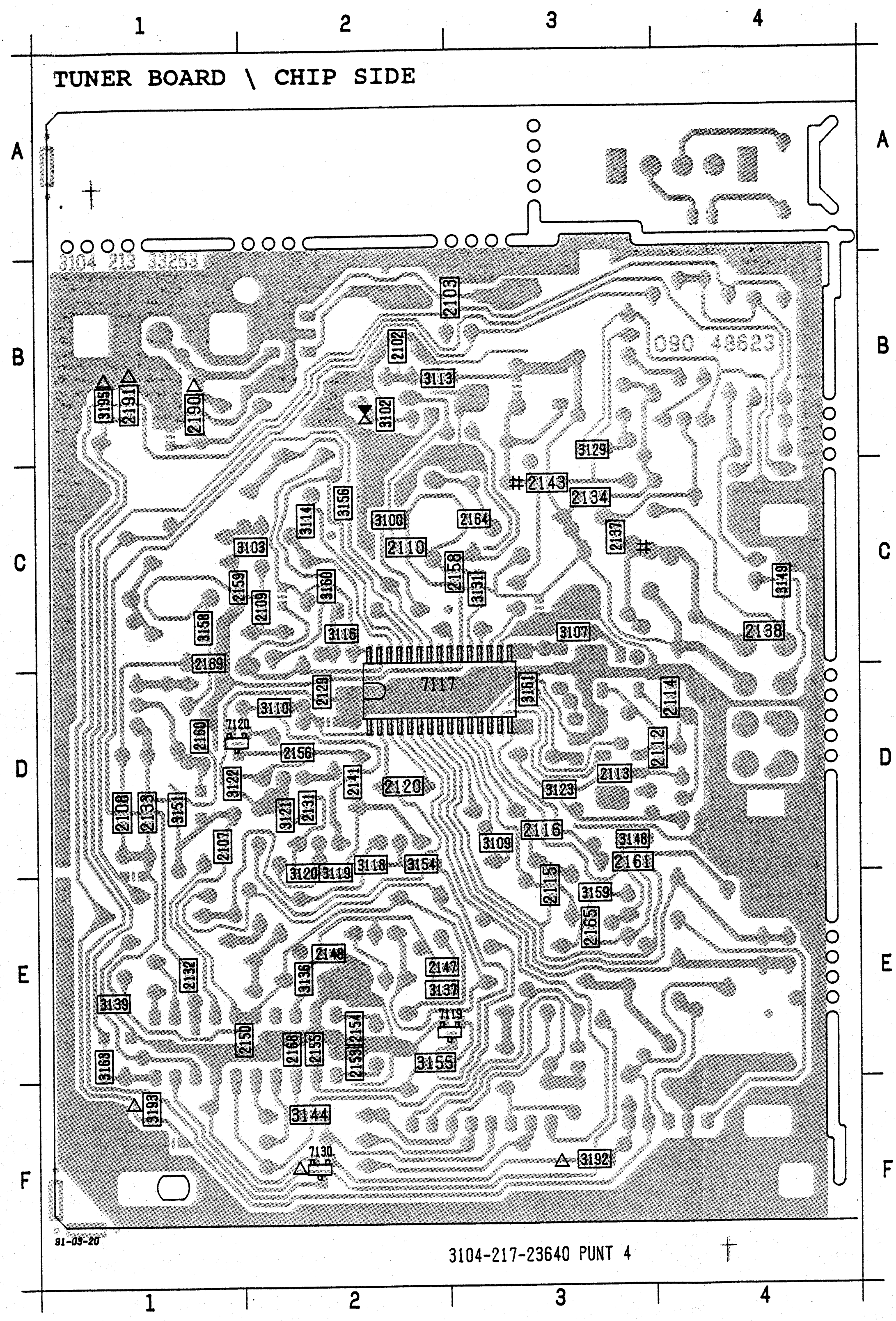

1
2
3
4
A
B
C
D
E
F
1100
1102
1103
1104
1105
1106
1107
5131
6101
7101
7102
7103
7104
7105
7106
7107
7116
7118
MW
LW
3104-217-23640 PUNT 4
91-03-20

|  |  |  |  |
|---|---|---|---|
| 1100 | A 4 | 5102 | C 3 |
| 1102 | F 1 | 5103 | C 4 |
| 1103 | F 2 | 5104 | D 4 |
| 1104 | B 2 | 5105 | D 2 |
| 1105 | A 1 | 5106 | D 2 |
| 1106 | F 2 | 5107 | D 1 |
| 1107 | A 2 | 5108 | B 2 |
| 2101 | B 3 | 5109 | C 3 |
| 2104 | C 3 | 5109 | D 2 |
| 2105 | C 2 | 5109 | D 2 |
| 2106 | D 4 | 5110 | E 3 |
| 2111 | C 3 | 5131 | B 3 |
| 2117 | E 2 | 6101 | B 4 |
| 2118 | D 2 | 6102 | C 2 |
| 2119 | D 2 | 6103 | C 4 |
| 2121 | C 3 | 6104 | E 4 |
| 2122 | C 4 | 6105 | C 2 |
| 2123 | E 1 | 6106 | B 2 |
| 2124 | D 1 | 6107 | E 3 |
| 2125 | E 1 | 6131 | E 2 |
| 2126 | E 1 | 6132 | E 2 |
| 2127 | C 3 | 6133 | A 1 |
| 2128 | B 3 | 7101 | B 3 |
| 2130 | C 2 | 7102 | D 4 |
| 2135 | C 2 | 7103 | D 1 |
| 2136 | C 1 | 7104 | E 2 |
| 2139 | B 2 | 7105 | D 3 |
| 2140 | B 2 | 7106 | D 3 |
| 2142 | C 2 | 7107 | D 3 |
| 2145 | E 1 | 7108 | B 1 |
| 2146 | E 2 | 7109 | C 1 |
| 2149 | E 3 | 7110 | C 1 |
| 2151 | E 4 | 7112 | B 2 |
| 2152 | E 4 | 7113 | C 1 |
| 3101 | B 2 | 7114 | E 3 |
| 3104 | C 4 | 7115 | E 3 |
| 3106 | D 4 | 7116 | E 4 |
| 3108 | D 1 | 7118 | D 4 |
| 3111 | E 1 | 8110 | B 1 |
| 3112 | E 1 | 9100 | E 4 |
| 3115 | C 3 | 9101 | F 4 |
| 3117 | F 3 | 9102 | E 3 |
| 3124 | B 1 | 9103 | E 4 |
| 3125 | B 1 | 9104 | C 4 |
| 3126 | B 1 | 9106 | E 3 |
| 3128 | C 2 | 9107 | B 3 |
| 3130 | B 2 | 9109 | D 3 |
| 3132 | B 1 | 9110 | D 3 |
| 3133 | E 4 | 9111 | D 3 |
| 3134 | E 2 | 9112 | C 2 |
| 3135 | E 2 | 9113 | E 2 |
| 3138 | E 2 | 9114 | E 2 |
| 3140 | E 1 | 9115 | D 3 |
| 3141 | F 2 |  |  |
| 3142 | F 3 |  |  |
| 3143 | F 3 |  |  |
| 3145 | B 1 |  |  |
| 3146 | E 3 |  |  |
| 3147 | D 3 |  |  |
| 3150 | D 4 |  |  |
| 3152 | D 4 |  |  |
| 3157 | B 3 |  |  |
| 3162 | E 2 |  |  |
| 3165 | C 3 |  |  |
| 3191 | B 4 |  |  |

△: ONLY FOR AUTOSTORE SETS (AS9600)
⧗: NOT FOR AUTOSTORE SETS
✳: ONLY FOR /17 UNITS
●: NOT FOR /17
#: NOT FOR /01 /10 AND /17 UNITS
✚: ONLY FOR /10 UNITS
◆: FOR EXTERNAL LOOPSUPPLY (AS9400)
(AS9500)

ↀ: ONLY FOR /01 UNITS

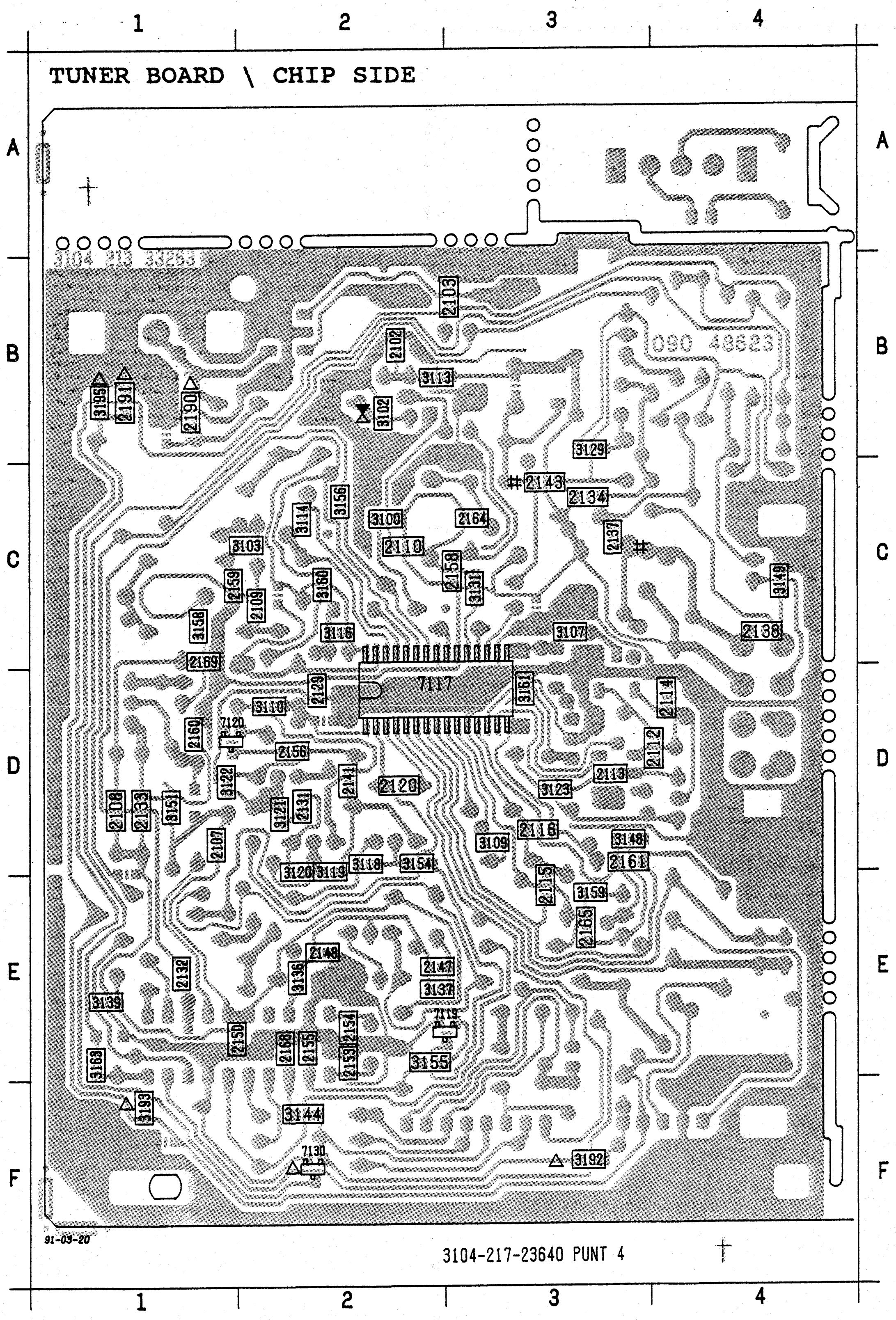
## TUNER BOARD \ CHIP SIDE


1
2
3
4
A
B
C
D
E
F
3104 213 33263
090 48623
7117
7119
7120
7130
3104-217-23640 PUNT 4
91-03-20

|  |  |  |  |
|---|---|---|---|
| 2102 | B 2 | 3156 | C 2 |
| 2103 | B 3 | 3158 | C 1 |
| 2107 | D 1 | 3159 | E 3 |
| 2108 | D 1 | 3160 | C 2 |
| 2109 | C 2 | 3161 | D 3 |
| 2110 | C 2 | 3163 | E 1 |
| 2112 | D 4 | 3192 | F 3 |
| 2113 | D 3 | 3193 | F 1 |
| 2114 | D 4 | 3195 | B 1 |
| 2115 | E 3 | 7117 | D 2 |
| 2116 | D 3 | 7119 | E 3 |
| 2120 | D 2 | 7120 | D 1 |
| 2129 | D 2 | 7130 | F 2 |
| 2131 | D 2 |  |  |
| 2132 | E 1 |  |  |
| 2133 | D 1 |  |  |
| 2134 | C 3 |  |  |
| 2137 | C 3 |  |  |
| 2138 | C 4 |  |  |
| 2141 | D 2 |  |  |
| 2143 | C 3 |  |  |
| 2147 | E 2 |  |  |
| 2148 | E 2 |  |  |
| 2150 | E 1 |  |  |
| 2153 | E 2 |  |  |
| 2154 | E 2 |  |  |
| 2155 | E 2 |  |  |
| 2156 | D 2 |  |  |
| 2158 | C 3 |  |  |
| 2159 | C 1 |  |  |
| 2160 | D 1 |  |  |
| 2161 | D 3 |  |  |
| 2164 | C 3 |  |  |
| 2165 | E 3 |  |  |
| 2168 | E 2 |  |  |
| 2169 | C 1 |  |  |
| 2190 | B 1 |  |  |
| 2191 | B 1 |  |  |
| 3100 | C 2 |  |  |
| 3102 | B 2 |  |  |
| 3103 | C 2 |  |  |
| 3107 | C 3 |  |  |
| 3109 | D 3 |  |  |
| 3110 | D 2 |  |  |
| 3113 | B 2 |  |  |
| 3114 | C 2 |  |  |
| 3116 | C 2 |  |  |
| 3118 | D 2 |  |  |
| 3119 | D 2 |  |  |
| 3120 | D 2 |  |  |
| 3121 | D 2 |  |  |
| 3122 | D 1 |  |  |
| 3123 | D 3 |  |  |
| 3129 | B 3 |  |  |
| 3131 | C 3 |  |  |
| 3136 | E 2 |  |  |
| 3137 | E 2 |  |  |
| 3139 | E 1 |  |  |
| 3144 | F 2 |  |  |
| 3148 | D 3 |  |  |
| 3149 | C 4 |  |  |
| 3151 | D 1 |  |  |
| 3154 | D 2 |  |  |
| 3155 | E 2 |  |  |

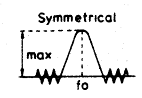
△: ONLY FOR AUTOSTORE SETS (AS9600)
⧗: NOT FOR AUTOSTORE SETS
✳: ONLY FOR /17 UNITS
#: NOT FOR /10 AND /17 UNITS
✚: ONLY FOR /10 UNITS

| | | |
|---|---|---|
| A 4 | 5102 | C 3 |
| F 1 | 5103 | C 4 |
| F 2 | 5104 | D 4 |
| B 2 | 5105 | D 2 |
| A 1 | 5106 | D 2 |
| F 2 | 5107 | D 1 |
| A 2 | 5108 | B 2 |
| B 3 | 5109 | C 3 |
| C 3 | 5109 | D 2 |
| C 2 | 5109 | D 2 |
| D 4 | 5110 | E 3 |
| C 3 | 5131 | B 3 |
| E 2 | 6101 | B 4 |
| D 2 | 6102 | C 2 |
| D 2 | 6103 | C 4 |
| C 3 | 6104 | E 4 |
| C 4 | 6105 | C 2 |
| E 1 | 6106 | B 2 |
| D 1 | 6107 | E 3 |
| E 1 | 6131 | E 2 |
| E 1 | 6132 | E 2 |
| C 3 | 6133 | A 1 |
| B 3 | 7101 | B 3 |
| C 2 | 7102 | D 4 |
| C 2 | 7103 | D 1 |
| C 1 | 7104 | E 2 |
| B 2 | 7105 | D 3 |
| B 2 | 7106 | D 3 |
| C 2 | 7107 | D 3 |
| E 1 | 7108 | B 1 |
| E 2 | 7109 | C 1 |
| E 3 | 7110 | C 1 |
| E 4 | 7112 | B 2 |
| E 4 | 7113 | C 1 |
| B 2 | 7114 | E 3 |
| C 4 | 7115 | E 3 |
| D 4 | 7116 | E 4 |
| D 1 | 7118 | D 4 |
| E 1 | 8110 | B 1 |
| E 1 | 9100 | E 4 |
| C 3 | 9101 | F 4 |
| F 3 | 9102 | E 3 |
| B 1 | 9103 | E 4 |
| B 1 | 9104 | C 4 |
| B 1 | 9106 | E 3 |
| C 2 | 9107 | B 3 |
| B 2 | 9109 | D 3 |
| B 1 | 9110 | D 3 |
| E 4 | 9111 | D 3 |
| E 2 | 9112 | C 2 |
| E 2 | 9113 | E 2 |
| E 2 | 9114 | E 2 |
| E 1 | 9115 | D 3 |
| F 2 | | |
| F 3 | | |
| F 3 | | |
| B 1 | | |
| E 3 | | |
| D 3 | | |
| D 4 | | |
| D 4 | | |
| B 3 | | |
| E 2 | | |
| C 3 | | |
| B 4 | | |


TUNER BOARD \ CHIP SIDE

| | | | |
|---|---|---|---|
| 2102 | B 2 | 3156 | C 2 |
| 2103 | B 3 | 3158 | C 1 |
| 2107 | D 1 | 3159 | E 3 |
| 2108 | D 1 | 3160 | C 2 |
| 2109 | C 2 | 3161 | D 3 |
| 2110 | C 2 | 3163 | E 1 |
| 2112 | D 4 | 3192 | F 3 |
| 2113 | D 3 | 3193 | F 1 |
| 2114 | D 4 | 3195 | B 1 |
| 2115 | E 3 | 7117 | D 2 |
| 2116 | D 3 | 7119 | E 3 |
| 2120 | D 2 | 7120 | D 1 |
| 2129 | D 2 | 7130 | F 2 |
| 2131 | D 2 | | |
| 2132 | E 1 | | |
| 2133 | D 1 | | |
| 2134 | C 3 | | |
| 2137 | C 3 | | |
| 2138 | C 4 | | |
| 2141 | D 2 | | |
| 2143 | C 3 | | |
| 2147 | E 2 | | |
| 2148 | E 2 | | |
| 2150 | E 1 | | |
| 2153 | E 2 | | |
| 2154 | E 2 | | |
| 2155 | E 2 | | |
| 2156 | D 2 | | |
| 2158 | C 3 | | |
| 2159 | C 1 | | |
| 2160 | D 1 | | |
| 2161 | D 3 | | |
| 2164 | C 3 | | |
| 2165 | E 3 | | |
| 2168 | E 2 | | |
| 2169 | C 1 | | |
| 2190 | B 1 | | |
| 2191 | B 1 | | |
| 3100 | C 2 | | |
| 3102 | B 2 | | |
| 3103 | C 2 | | |
| 3107 | C 3 | | |
| 3109 | D 3 | | |
| 3110 | D 2 | | |
| 3113 | B 2 | | |
| 3114 | C 2 | | |
| 3116 | C 2 | | |
| 3118 | D 2 | | |
| 3119 | D 2 | | |
| 3120 | D 2 | | |
| 3121 | D 2 | | |
| 3122 | D 1 | | |
| 3123 | D 3 | | |
| 3129 | B 3 | | |
| 3131 | C 3 | | |
| 3136 | E 2 | | |
| 3137 | E 2 | | |
| 3139 | E 1 | | |
| 3144 | F 2 | | |
| 3148 | D 3 | | |
| 3149 | C 4 | | |
| 3151 | D 1 | | |
| 3154 | D 2 | | |
| 3155 | E 2 | | |

△: ONLY FOR AUTOSTORE SETS (AS9600)
⧗: NOT FOR AUTOSTORE SETS
✳: ONLY FOR /17 UNITS
#: NOT FOR /10 AND /17 UNITS
✣: ONLY FOR /10 UNITS

| SK... | FREQUENCY | I/P | DISPLAY | ADJUST | O/P | SCOPE/METER |
|---|---|---|---|---|---|---|
| Varicap alignment | | | | | | |
| FM<br>87.5-108MHz | | | 108MHz<br>87.5MHz | 5103<br>check | 1 | 8V<br>2.9V ± 0.3V |
| LW<br>148-284kHz | | | 284kHz | 5108 | | 8.5V |
| MW<br>522-1611kHz<br>(530-1700kHz) | | | 1611kHz<br>(1700kHz) | 2139 | | 7.8V #<br>8.5V +<br>(8.0V) |
| | | | 522kHz<br>(530kHz) | 5108 | | 1.2V #<br>(1.0V) |
| FM-RF | | | | | | |
| FM | 87.5MHz<br>mod = 1kHz<br>Δf = 22.5kHz | B | 87.5MHz | 5102 | 3 | max. |
| | 108MHz<br>mod = 1kHz<br>f = 22.5kHz | | 108MHz | 2105 | | |
| Stereo decoder | | | | | | |
| FM | 98MHz<br>carrier<br>1mV | B | 98MHz | 3115 | 2 | 76 ± 0.2kHz |
| AM-IF | | | | | | |
| MW | 450kHz $<br>Δf = 10kHz<br>50Hz | C | 522kHz<br>(530kHz) | 5106<br>5105 | 3 |  Symmetrical<br>max<br>fo |
| AM-RF | | | | | | |
| LW * | 200kHz | A | 200kHz | 5107 | 3 | max. |
| MW * | 558kHz<br>(560kHz) | | 558kHz<br>(560kHz) | 5107 | | |
| | 1494kHz<br>(1600kHz) | | 1494kHz<br>(1600kHz) | 2135 | | |

* Mod 1kHz 30% AM
$ via 100nF
(..) Grid 10kHz for -/21/37 only
+ For LW version only
# Not for LW version

↕ Repeat

| 7101 | | 7102 | |
|---|---|---|---|
| e : | 0.5V | e : | 0.5V |
| b : | 1.2V | b : | 1.2V |
| c : | 10.7V | c : | 4.8V |

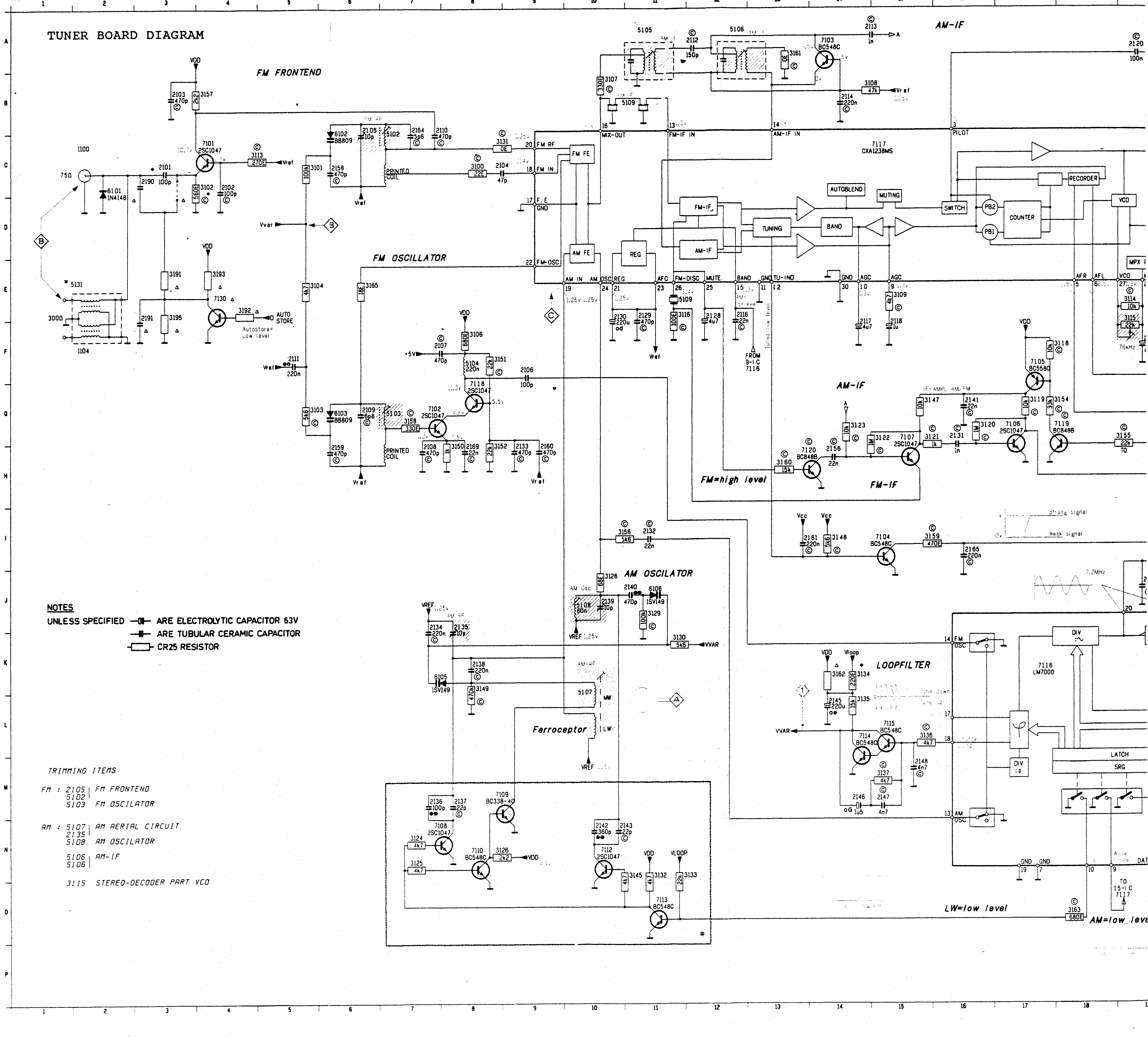
| 7103 | | 7118 | |
|---|---|---|---|
| e : | 0V | e : | 4.8V |
| b : | 0.5V | b : | 5.5V |
| c : | 0.5V | c : | 11.3V |

| 7116 | | 7117 | |
|---|---|---|---|
| 1 : | 1.7V | 1 : | 1.0V |
| 2 : | - | 2 : | 1.4V |
| 3 : | - | 3 : | 1.0V |
| 4 : | - | 4 : | 3.2V |
| 5 : | - | 5 : | 2.5V |
| 6 : | 0.2V | 6 : | 2.5V |
| 7 : | 0V | 7 : | 6.5V |
| 8 : | 0.2V | 8 : | 3.6V |
| 9 : | 1.3V | 9 : | 1.3V |
| 10 : | 0.7V | 10 : | 1.3V |
| 11 : | 0.1V | 11 : | 0V |
| 12 : | 0.1V | 12 : | 0.1V |
| 13 : | 0.1V | 13 : | 1.3V |
| 14 : | 2.8V | 14 : | 0V |
| 15 : | 5.6V | 15 : | 1.3V |
| 16 : | 5.6V | 16 : | 0.3V |
| 17 : | - | 17 : | 0V |
| 18 : | 1.0V | 18 : | 0.4V |
| 19 : | 0V | 19 : | 1.25V |
| 20 : | 0.9V | 20 : | 1.25V |
| | | 21 : | 1.25V |
| | | 22 : | 1.25V |
| | | 23 : | 1.25V |
| | | 24 : | 1.25V |
| | | 25 : | 0.2V |
| | | 26 : | 3.4V |
| | | 27 : | 1.3V |
| | | 28 : | 1.7V |
| | | 29 : | 0V |
| | | 30 : | 0V |

....V measured in tuner
FM on position

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1100 C 2 | 1105 P22 | 2102 C 4 | 2106 F 9 | 2110 B 7 | 2114 B14 | 2118 F15 | 2122 C20 | 2126 G25 | 2130 E10 | 2134 J 7 | 2138 K 8 | 2142 N10 | 2147 M15 | 2151 L22 | 2155 N23 | 2160 H 9 | 2168 O23 | 3100 C 8 | 3104 E 5 | 3109 E15 | 3113 C 5 | 3117 M24 | 3121 G16 | 3125 N 7 | 3130 K11 | 3134 K14 | 3138 K22 | 3142 O24 | 3146 J21 |
| 1102 F26 | 1106 O24 | 2103 B 3 | 2107 F 8 | 2111 F 5 | 2115 B20 | 2119 E19 | 2123 F25 | 2127 F19 | 2131 G16 | 2135 J 8 | 2139 J10 | 2143 N10 | 2148 M15 | 2152 L22 | 2156 H14 | 2161 I13 | 2169 H 8 | 3101 C 5 | 3106 F 8 | 3110 O20 | 3114 E19 | 3118 F17 | 3122 G14 | 3126 N 9 | 3131 C 9 | 3135 L14 | 3139 M23 | 3143 O24 | 3147 G15 |
| 1103 M26 | 1107 O23 | 2104 C 9 | 2108 H 7 | 2112 A12 | 2116 E12 | 2120 A19 | 2124 G24 | 2128 E12 | 2132 I11 | 2136 M 7 | 2140 J11 | 2145 L14 | 2149 K21 | 2153 J19 | 2158 C 6 | 2164 B 7 | 2190 C 3 | 3102 C 3 | 3107 B10 | 3111 G24 | 3115 F19 | 3119 G17 | 3123 G14 | 3128 J10 | 3132 N11 | 3136 L15 | 3140 H25 | 3144 N24 | 3148 I14 |
| 1104 F 2 | 2101 C 3 | 2105 B 6 | 2109 G 6 | 2113 A15 | 2117 F14 | 2121 C21 | 2125 G24 | 2129 E11 | 2133 H 9 | 2137 M 8 | 2141 G16 | 2146 M14 | 2150 K21 | 2154 J19 | 2159 H 6 | 2165 I16 | 2191 E 3 | 3103 G 5 | 3108 B15 | 3112 G24 | 3116 E11 | 3120 G16 | 3124 N 7 | 3129 J11 | 3133 N11 | 3137 M15 | 3141 N24 | 3145 N10 | 3149 K 8 |

# TUNER BOARD DIAGRAM


FM FRONTEND
FM OSCILLATOR
AM OSCILATOR
Ferroceptor
LOOPFILTER
AM-IF
FM-IF
FM=high level
LW=low level
AM=low level
7101 2SC1047
7102 2SC1047
7103 BC548C
7104 BC548C
7105 BC558C
7106 2SC1047
7107 2SC1047
7108 2SC1047
7109 BC338-40
7110 BC548C
7112 2SC1047
7113 BC548C
7114 BC548C
7115 BC548C
7116 LM7000
7117 CXA1238MS
7118 2SC1047
7119 BC848B
7120 BC848B
7130
FM FE
AM FE
FM-IF
AM-IF
REG
TUNING
BAND
MUTING
AUTOBLEND
SWITCH
PB1
PB2
COUNTER
RECORDER
VCO
LATCH
SRG
DIV
PILOT
MIX-OUT
FM-IF IN
AM-IF IN
FM RF
FM IN
F.E GND
FM-OSC
AM IN
AM OSC
REG
AFC
FM-DISC
MUTE
BAND
GND
TU-IND
AGC
AFR
AFL
VCO
MPX
AUTO STORE
Autostore= Low level
75Ω
1100
1104
3000
5131
5105
5106
5107
5108
5109
VDD
Vref
Vvar
VVAR
VLOOP
Vcc
FROM 9-1C 7116
TO 15-1C 7117
Strong signal
Week signal
7.2MHz
76kHz
PRINTED COIL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
A B C D E F G H I J K L M N O P

**NOTES**

UNLESS SPECIFIED —▯— ARE ELECTROLYTIC CAPACITOR 63V
—▮— ARE TUBULAR CERAMIC CAPACITOR
—▭— CR25 RESISTOR

*TRIMMING ITEMS*

*FM : 2105 | FM FRONTEND*
*5102 |*
*5103 FM OSCILATOR*

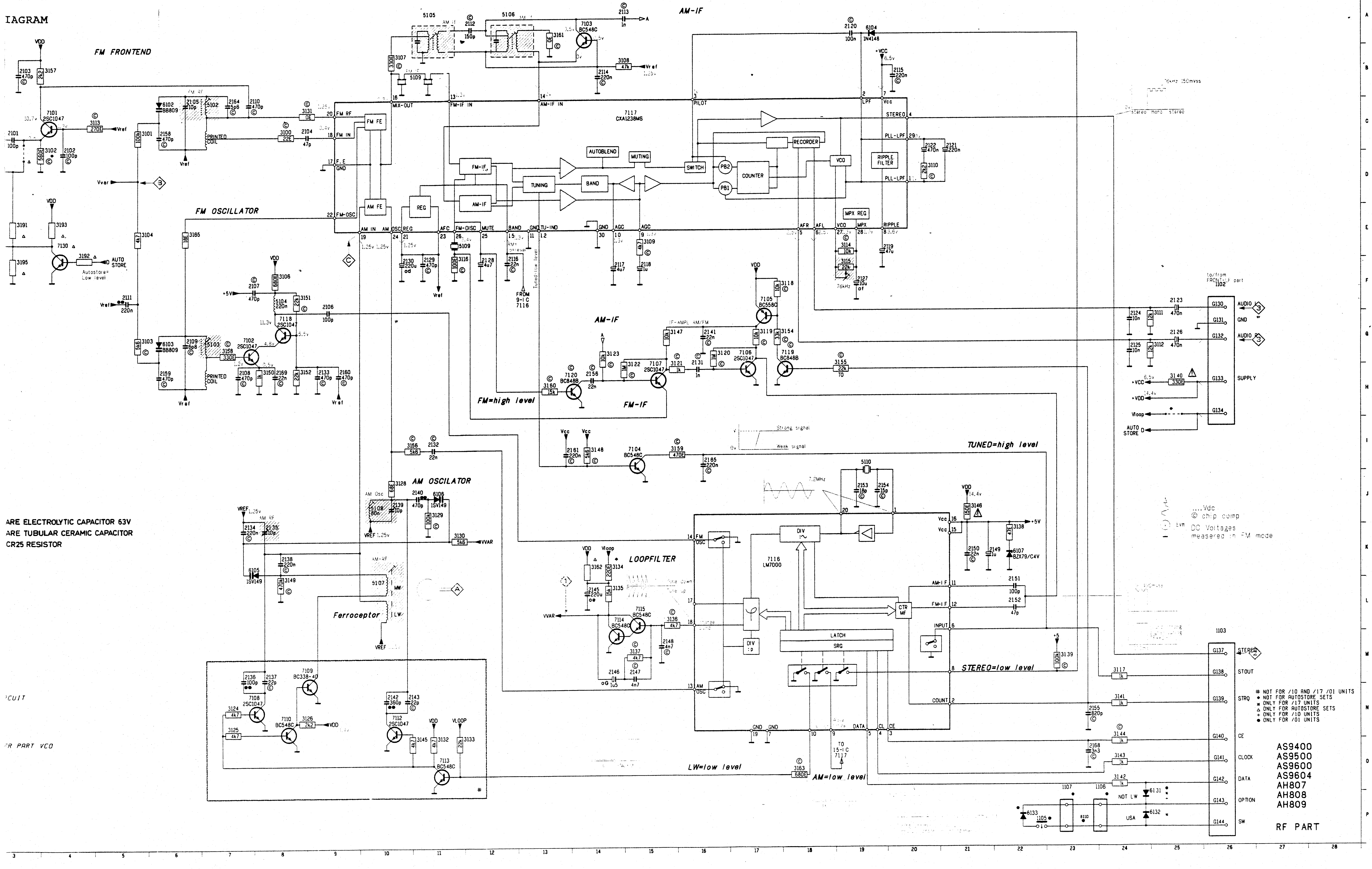
*AM : 5107 | AM AERIAL CIRCUIT*
*2135 |*
*5108 AM OSCILATOR*

*5106 | AM-IF*
*5106 |*

*3115 STEREO-DECODER PART VCO*

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2110 | B 7 | 2114 | B14 | 2118 | F15 | 2122 | C20 | 2126 | G25 | 2130 | E10 | 2134 | J 7 | 2138 | K 8 | 2142 | N10 | 2147 | M15 | 2151 | L22 | 2155 | N23 | 2160 | H 9 | 2168 | O23 | 3100 | C 8 | 3104 | E 5 | 3109 | E15 | 3113 | C 5 | 3117 | M24 | 3121 | G16 | 3125 | N 7 | 3130 | K11 | 3134 | K14 | 3138 | K22 | 3142 | O24 | 3146 | J21 | 3150 | H 8 | 3155 | G19 | 3159 | I16 | 3163 | O18 | 3193 | E 4 | 5104 | F 8 | 5108 | J10 | 6102 | B 6 | 6106 | J11 | 6133 | P22 | 7104 | I15 | 7108 | N 8 | 7113 | O11 | 7117 | C15 | 7130 | E 4 |
| 2111 | F 5 | 2115 | B20 | 2119 | E19 | 2123 | F25 | 2127 | F19 | 2131 | G16 | 2135 | J 8 | 2139 | J10 | 2143 | N10 | 2148 | M15 | 2152 | L22 | 2156 | H14 | 2161 | I13 | 2169 | H 8 | 3101 | C 5 | 3106 | F 8 | 3110 | D20 | 3114 | E19 | 3118 | F17 | 3122 | G14 | 3126 | N 9 | 3131 | C 9 | 3135 | L14 | 3139 | M23 | 3143 | O24 | 3147 | G15 | 3151 | F 8 | 3156 | I11 | 3160 | H13 | 3165 | E 6 | 3195 | E 3 | 5105 | A11 | 5109 | E11 | 6103 | G 6 | 6107 | K22 | 7101 | C 4 | 7105 | F17 | 7109 | M 9 | 7114 | L14 | 7118 | G 8 | | |
| 2112 | A12 | 2116 | E12 | 2120 | A19 | 2124 | G24 | 2128 | E12 | 2132 | I11 | 2136 | M 7 | 2140 | J11 | 2145 | L14 | 2149 | K21 | 2153 | J19 | 2158 | C 6 | 2164 | B 7 | 2190 | C 3 | 3102 | C 3 | 3107 | B10 | 3111 | G24 | 3115 | F19 | 3119 | G17 | 3123 | G14 | 3128 | J10 | 3132 | N11 | 3136 | L15 | 3140 | H25 | 3144 | N24 | 3148 | I14 | 3152 | H 8 | 3157 | B 3 | 3161 | A13 | 3191 | E 3 | 5102 | C 7 | 5106 | A12 | 5110 | I19 | 6104 | A19 | 6131 | O24 | 7102 | G 7 | 7106 | G17 | 7110 | N 8 | 7115 | L15 | 7119 | G18 | | |
| 2113 | A15 | 2117 | F14 | 2121 | C21 | 2125 | G24 | 2129 | E11 | 2133 | H 9 | 2137 | M 8 | 2141 | G16 | 2146 | M14 | 2150 | K21 | 2154 | J19 | 2159 | H 6 | 2165 | I16 | 2191 | E 3 | 3103 | G 5 | 3108 | B15 | 3112 | G24 | 3116 | E11 | 3120 | G16 | 3124 | N 7 | 3129 | J11 | 3133 | N11 | 3137 | M15 | 3141 | N24 | 3145 | N10 | 3149 | K 8 | 3154 | G17 | 3158 | G 7 | 3162 | K14 | 3192 | E 4 | 5103 | G 7 | 5107 | L10 | 6101 | C 2 | 6105 | K 8 | 6132 | P24 | 7103 | A14 | 7107 | G15 | 7112 | N10 | 7116 | K17 | 7120 | H14 | | |

# IAGRAM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25
26
27
28
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
FM FRONTEND
VDD
2103
470p
3157
2k2
7101
2SC1047
10,7v
3113
270E
Vref
2101
100p
3101
100k
3102
560E
2102
100p
6102
BB809
2105
10p
5102
2158
470p
PRINTED COIL
2164
5p6
2110
470p
3131
0E
3100
22E
2104
47p
FM RF
FM IN
F. E
GND
FM FE
AM FE
FM-OSC
Vvar
FM OSCILLATOR
3191
3193
7130
3192
AUTO STORE
Autostore= Low level
3195
3104
4k7
3165
18E
VDD
3106
680E
2107
470p
+5V
2111
220n
5104
220n
3151
22k
2106
100p
7118
2SC1047
7102
2SC1047
3158
330E
6103
BB809
2109
6p8
5103
3103
5k6
2159
470p
2108
470p
3150
1k
2169
22n
3152
22k
2133
470p
2160
470p
5105
AM IF
2112
150p
5106
7103
BC548C
3161
0E
3107
330E
5109
3108
47k
2114
220n
2113
1n
AM-IF
MIX-OUT
FM-IF IN
AM-IF IN
7117
CXA1238MS
FM-IF
AM-IF
REG
TUNING
BAND
AUTOBLEND
MUTING
SWITCH
PB2
PB1
COUNTER
RECORDER
VCO
RIPPLE FILTER
MPX REG
PILOT
LPF
Vcc
STEREO
PLL-LPF
RIPPLE
AM IN
AM OSC
REG
AFC
FM-DISC
MUTE
BAND
GND
TU-IND
GND
AGC
AGC
AFR
AFL
VCC
MPX
2120
100n
6104
1N4148
+VCC
6,5v
2115
220n
2122
470n
2121
220n
3110
2k2
2119
47u
2130
220u
2129
470p
3116
100E
2128
4u7
2116
22n
FROM 9-IC 7116
Tuned=low level
2117
4u7
3109
4k7
2118
1u
3114
10k
3115
22k
2127
10u
76kHz
19kHz 150mvss
stereo mono stereo
1102
to/from FRONT-IF part
2123
470n
2124
10n
3111
12k
2126
470n
2125
10n
3112
12k
G130
AUDIO L
G131
GND
G132
AUDIO R
3140
330E
G133
SUPPLY
+VCC
+VDD
6,5v
14,4v
Vloop
G134
AUTO STORE
3118
10k
7105
BC558C
3147
10k
IF-AMPL AM/FM
2141
22n
3119
10k
3154
33k
7119
BC848B
3155
22k
TO
3123
10k
7120
BC848B
3160
15k
2156
22n
3122
1M
7107
2SC1047
3121
1k
2131
1n
3120
1M
7106
2SC1047
FM=high level
FM-IF
AM-IF
3156
5k6
2132
22n
Vcc
2161
220n
3148
5k6
7104
BC548C
3159
470E
2185
220n
TUNED=high level
Strong signal
Week signal
0v
AM OSCILATOR
AM Osc
5108
80n
2140
470p
6106
1SV149
2139
10p
3128
68E
3129
100k
3130
5k6
VVAR
VREF
1,25v
2134
220n
2135
10p
AM RF
2138
220n
6105
1SV149
3149
470k
5107
MW
LW
Ferroceptor
VREF
5110
7,2MHz
2153
18p
2154
15p
VDD
14,4v
3146
150E
3138
47k
+5V
2150
22n
2149
1u
6107
BZX79/C4V
7116
LM7000
DIV
FM OSC
AM OSC
Vcc
LOOPFILTER
3162
220E
3134
VDD
Vloop
2145
220u
3135
15k
VVAR
7115
BC548C
7114
BC548C
3136
4k7
2148
4n7
3137
4k7
2146
1u5
2147
4n7
DIV 1:p
LATCH
SRG
CTR MF
AM-IF
FM-IF
INPUT
2151
100p
2152
47p
3139
100k
STEREO=low level
COUNT
GND
DATA
CL
CE
TO 15-IC 7117
LW=low level
AM=low level
3163
680E
2155
820p
2168
3n3
3117
1k
3141
1k
3144
1k
3143
1k
3142
1k
2136
100p
2137
22p
7108
2SC1047
3124
4k7
3125
4k7
7109
BC338-40
7110
BC548C
3126
2k2
VDD
2142
360p
2143
22p
7112
2SC1047
VDD
VLOOP
3145
4k7
3132
4k7
3133
22k
7113
BC548C
#
....Vdc
© chip comp
EVM
DC Voltages measered in FM mode
1103
G137
STEREO
G138
STOUT
G139
STRQ
G140
CE
G141
CLOCK
G142
DATA
G143
OPTION
G144
SW
NOT LW
6131
USA
6132
1107
1106
6110
6133
1105

ARE ELECTROLYTIC CAPACITOR 63V
ARE TUBULAR CERAMIC CAPACITOR
CR25 RESISTOR

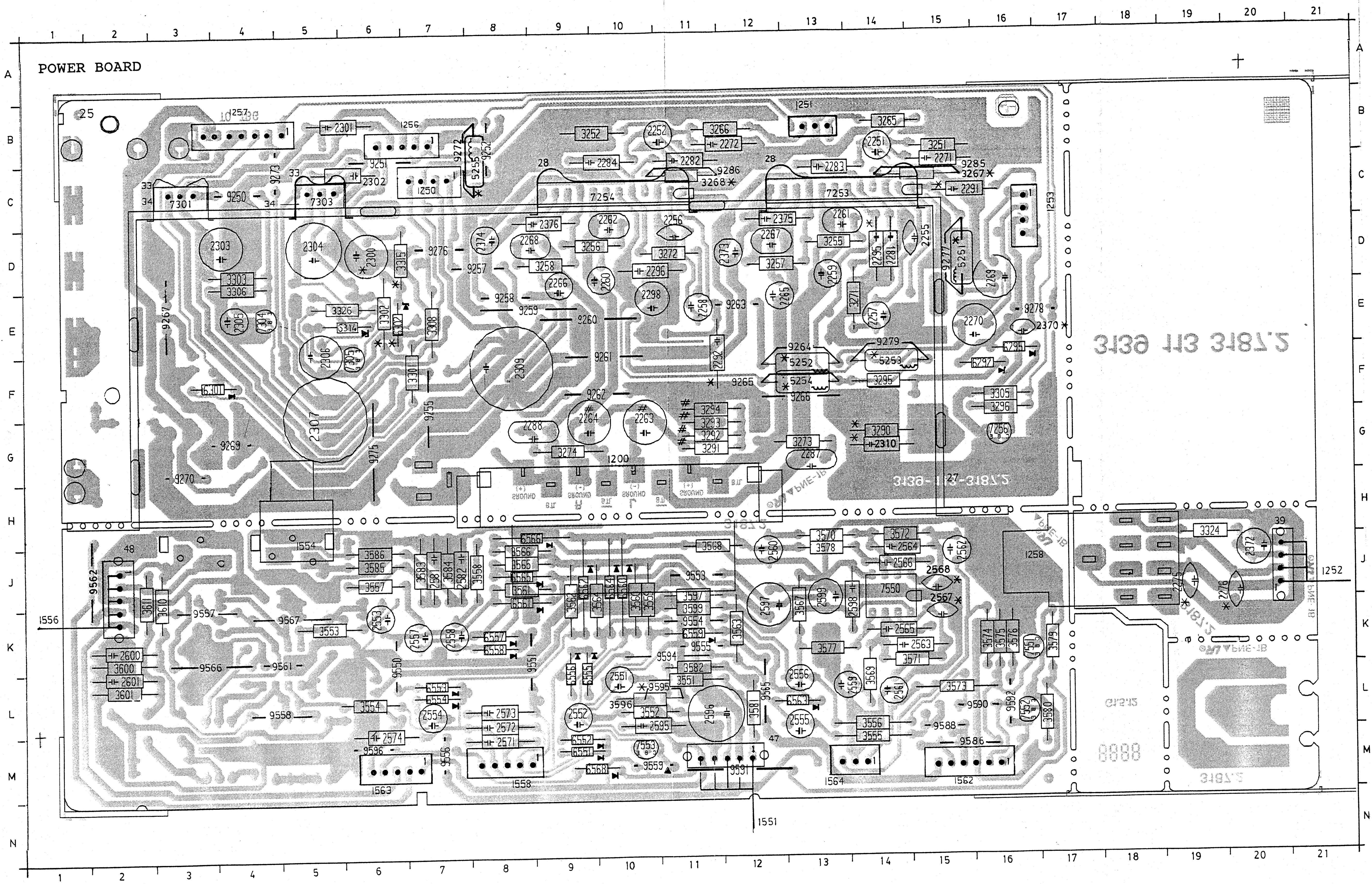
CUIT

R PART VCO

# NOT FOR /10 AND /17 /01 UNITS
◆ NOT FOR AUTOSTORE SETS
✱ ONLY FOR /17 UNITS
△ ONLY FOR AUTOSTORE SETS
+ ONLY FOR /10 UNITS
● ONLY FOR /01 UNITS

AS9400
AS9500
AS9600
AS9604
AH807
AH808
AH809

RF PART


POWER BOARD
3139 113 3187.2
1200
1250
1251
1252
1253
1256
1257
1258
1551
1554
1556
1558
1562
1563
1564
7253
7254
7301
7303
7550
9562
2307
2309

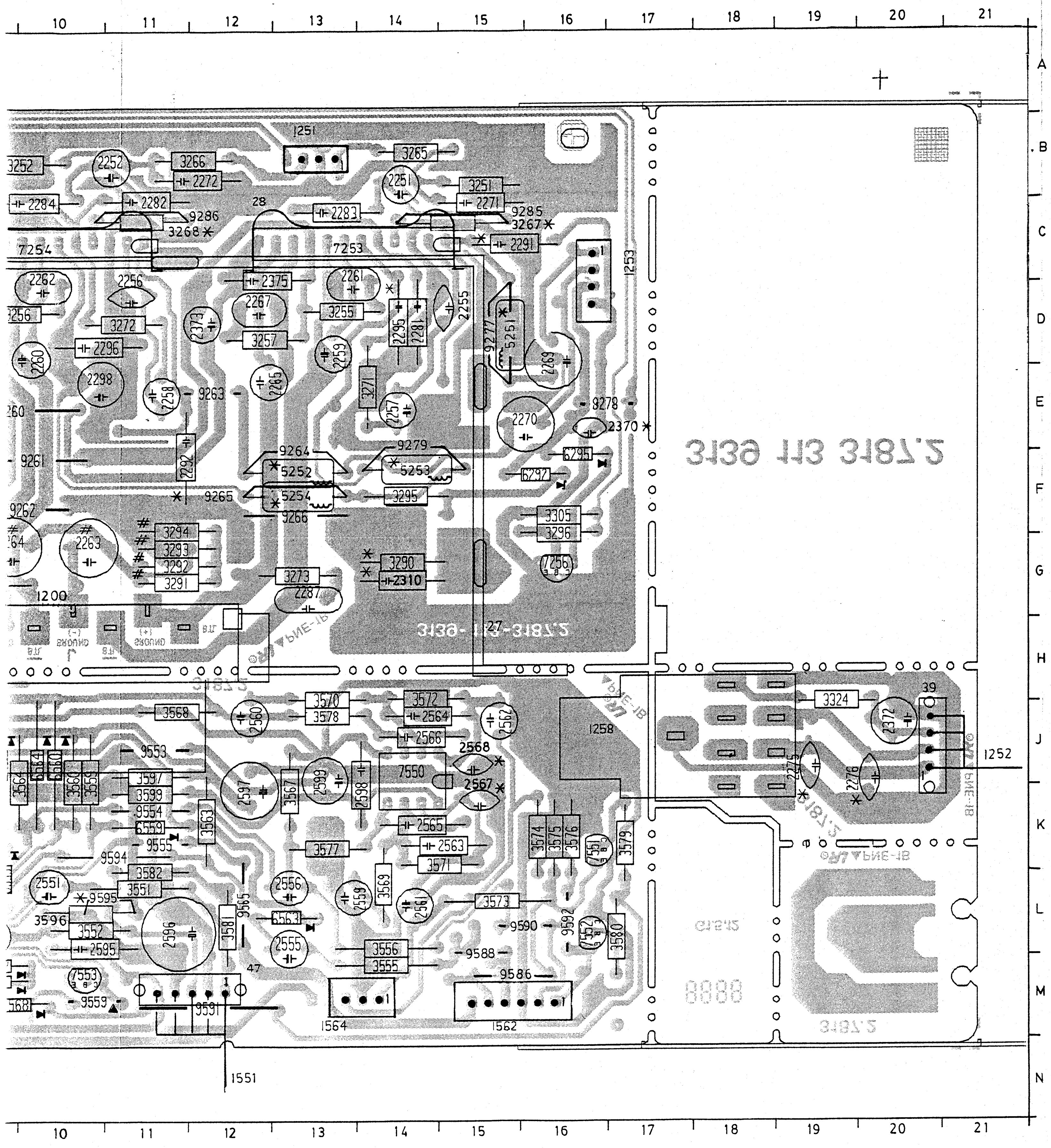
| | |
|---|---|
| 0025 | B2 |
| 0027 | H15 |
| 0028 | C12 |
| 0033 | C3 |
| 0034 | C3 |
| 0039 | H20 |
| 0047 | M12 |
| 0048 | H2 |
| 1200 | G10 |
| 1250 | C7 |
| 1251 | B13 |
| 1252 | J21 |
| 1253 | C17 |
| 1256 | B7 |
| 1257 | B4 |
| 1258 | J16 |
| 1551 | N12 |
| 1554 | H5 |
| 1556 | K1 |
| 1558 | M8 |
| 1562 | M15 |
| 1563 | M6 |
| 1564 | M13 |
| 2251 | B14 |
| 2252 | B11 |
| 2255 | D15 |
| 2256 | C11 |
| 2257 | E14 |
| 2258 | E11 |
| 2259 | D13 |
| 2260 | D10 |
| 2261 | C14 |
| 2262 | C10 |
| 2263 | G11 |
| 2264 | G9 |
| 2265 | E13 |
| 2266 | D9 |
| 2267 | D12 |
| 2268 | D9 |
| 2269 | D16 |
| 2270 | E16 |
| 2271 | B15 |
| 2272 | B12 |
| 2275 | J19 |
| 2276 | J19 |
| 2281 | D14 |
| 2282 | B11 |
| 2283 | C13 |
| 2284 | C10 |
| 2287 | G13 |
| 2288 | G9 |
| 2291 | C16 |
| 2292 | F11 |
| 2295 | D14 |
| 2296 | D11 |
| 2298 | E11 |
| 2300 | D6 |
| 2301 | B6 |
| 2302 | C6 |
| 2303 | D4 |
| 2304 | D5 |
| 2305 | E4 |
| 2306 | F5 |
| 2307 | G5 |
| 2309 | F8 |
| 2310 | G14 |
| 2372 | J20 |
| 2373 | D12 |
| 2374 | D8 |
| 2375 | C13 |
| 2376 | C9 |
| 2377 | E17 |
| 2551 | L10 |
| 2552 | L9 |
| 2553 | K6 |
| 2554 | L7 |
| 2555 | L13 |
| 2556 | L13 |
| 2557 | K7 |
| 2558 | K7 |
| 2559 | L14 |
| 2560 | J12 |
| 2561 | L15 |
| 2562 | J15 |
| 2563 | K15 |
| 2564 | J14 |

NOTE :

∗ FOR -/22 ONLY

# FOR -/37 ONLY

▲ NOT FOR -/22



| | | | | | |
|---|---|---|---|---|---|
| 0025 | B2 | 2565 | K14 | 3599 | K11 |
| 0027 | H15 | 2566 | J14 | 3600 | K2 |
| 0028 | C12 | 2567 | J15 | 3601 | L2 |
| 0033 | C3 | 2568 | J15 | 3610 | J3 |
| 0034 | C3 | 2571 | M8 | 3611 | J2 |
| 0039 | H20 | 2572 | L8 | 5251 | D15 |
| 0047 | M12 | 2573 | L8 | 5252 | F13 |
| 0048 | H2 | 2574 | M6 | 5253 | F14 |
| 1200 | G10 | 2581 | J7 | 5254 | F13 |
| 1250 | C7 | 2582 | J7 | 6270 | G3 |
| 1251 | B13 | 2595 | L11 | 6292 | F16 |
| 1252 | J21 | 2596 | L11 | 6295 | F16 |
| 1253 | C17 | 2597 | K12 | 6301 | F4 |
| 1256 | B7 | 2598 | K14 | 6302 | E6 |
| 1257 | B4 | 2599 | J13 | 6314 | E6 |
| 1258 | J16 | 2600 | K2 | 6551 | M9 |
| 1551 | N12 | 2601 | L2 | 6552 | M9 |
| 1554 | H5 | 3251 | B15 | 6553 | L7 |
| 1556 | K1 | 3252 | B10 | 6554 | L7 |
| 1558 | M8 | 3255 | D13 | 6555 | L9 |
| 1562 | M15 | 3256 | D10 | 6556 | L9 |
| 1563 | M6 | 3257 | D12 | 6557 | K8 |
| 1564 | M13 | 3258 | D9 | 6558 | K8 |
| 2251 | B14 | 3265 | B14 | 6559 | K11 |
| 2252 | B11 | 3266 | B12 | 6560 | J10 |
| 2255 | D15 | 3267 | C16 | 6561 | J8 |
| 2256 | C11 | 3268 | C11 | 6562 | J9 |
| 2257 | E14 | 3271 | E14 | 6563 | L13 |
| 2258 | E11 | 3272 | D11 | 6564 | J10 |
| 2259 | D13 | 3273 | G13 | 6565 | J8 |
| 2260 | D10 | 3274 | G9 | 6566 | H9 |
| 2261 | C14 | 3290 | G14 | 6568 | M10 |
| 2262 | C10 | 3291 | G11 | 7253 | C13 |
| 2263 | G11 | 3292 | G11 | 7254 | C10 |
| 2264 | G9 | 3293 | F11 | 7256 | G16 |
| 2265 | E13 | 3294 | F11 | 7301 | C3 |
| 2266 | D9 | 3295 | F14 | 7303 | C5 |
| 2267 | D12 | 3296 | F16 | 7304 | E4 |
| 2268 | D9 | 3301 | F7 | 7305 | F6 |
| 2269 | D16 | 3302 | E6 | 7550 | J14 |
| 2270 | E16 | 3303 | D4 | 7551 | K16 |
| 2271 | B15 | 3304 | D6 | 7552 | L16 |
| 2272 | B12 | 3305 | F16 | 7553 | M10 |
| 2275 | J19 | 3306 | D4 | 9250 | C4 |
| 2276 | J19 | 3308 | E7 | 9251 | B6 |
| 2281 | D14 | 3315 | D7 | 9252 | B8 |
| 2282 | B11 | 3324 | H19 | 9253 | B8 |
| 2283 | C13 | 3326 | E6 | 9255 | F7 |
| 2284 | C10 | 3551 | L11 | 9257 | D8 |
| 2287 | G13 | 3552 | L10 | 9258 | E8 |
| 2288 | G9 | 3553 | K5 | 9259 | E9 |
| 2291 | C16 | 3554 | L6 | 9260 | E9 |
| 2292 | F11 | 3555 | M14 | 9261 | F10 |
| 2295 | D14 | 3556 | L14 | 9262 | F10 |
| 2296 | D11 | 3557 | J6 | 9263 | E12 |
| 2298 | E11 | 3558 | J8 | 9264 | F13 |
| 2300 | D6 | 3559 | K10 | 9265 | F12 |
| 2301 | B6 | 3560 | K10 | 9266 | F13 |
| 2302 | C6 | 3561 | J8 | 9267 | E3 |
| 2303 | D4 | 3562 | J9 | 9269 | G4 |
| 2304 | D5 | 3563 | K12 | 9273 | C5 |
| 2305 | E4 | 3564 | J10 | 9275 | G6 |
| 2306 | F5 | 3565 | J8 | 9276 | D7 |
| 2307 | G5 | 3566 | J8 | 9277 | D15 |
| 2309 | F8 | 3567 | K13 | 9278 | E17 |
| 2310 | G14 | 3568 | J11 | 9279 | E14 |
| 2372 | J20 | 3569 | L14 | 9285 | C16 |
| 2373 | D12 | 3570 | H13 | 9286 | C12 |
| 2374 | D8 | 3571 | K15 | 9550 | K6 |
| 2375 | C13 | 3572 | H14 | 9551 | K8 |
| 2376 | C9 | 3573 | L15 | 9553 | J11 |
| 2377 | E17 | 3574 | K16 | 9554 | K11 |
| 2551 | L10 | 3575 | K16 | 9555 | K11 |
| 2552 | L9 | 3576 | K16 | 9556 | M7 |
| 2553 | K6 | 3577 | K13 | 9557 | K3 |
| 2554 | L7 | 3578 | J13 | 9558 | L4 |
| 2555 | L13 | 3579 | K17 | 9559 | M10 |
| 2556 | L13 | 3580 | L17 | 9561 | K5 |
| 2557 | K7 | 3581 | L12 | 9565 | L12 |
| 2558 | K7 | 3582 | L11 | 9566 | K3 |
| 2559 | L14 | 3583 | J7 | 9567 | K5 |
| 2560 | J12 | 3584 | J9 | 9586 | M15 |
| 2561 | L15 | 3585 | J6 | 9588 | M15 |
| 2562 | J15 | 3586 | J6 | 9590 | L15 |
| 2563 | K15 | 3596 | L10 | 9592 | L16 |
| 2564 | J14 | 3597 | J11 | | |

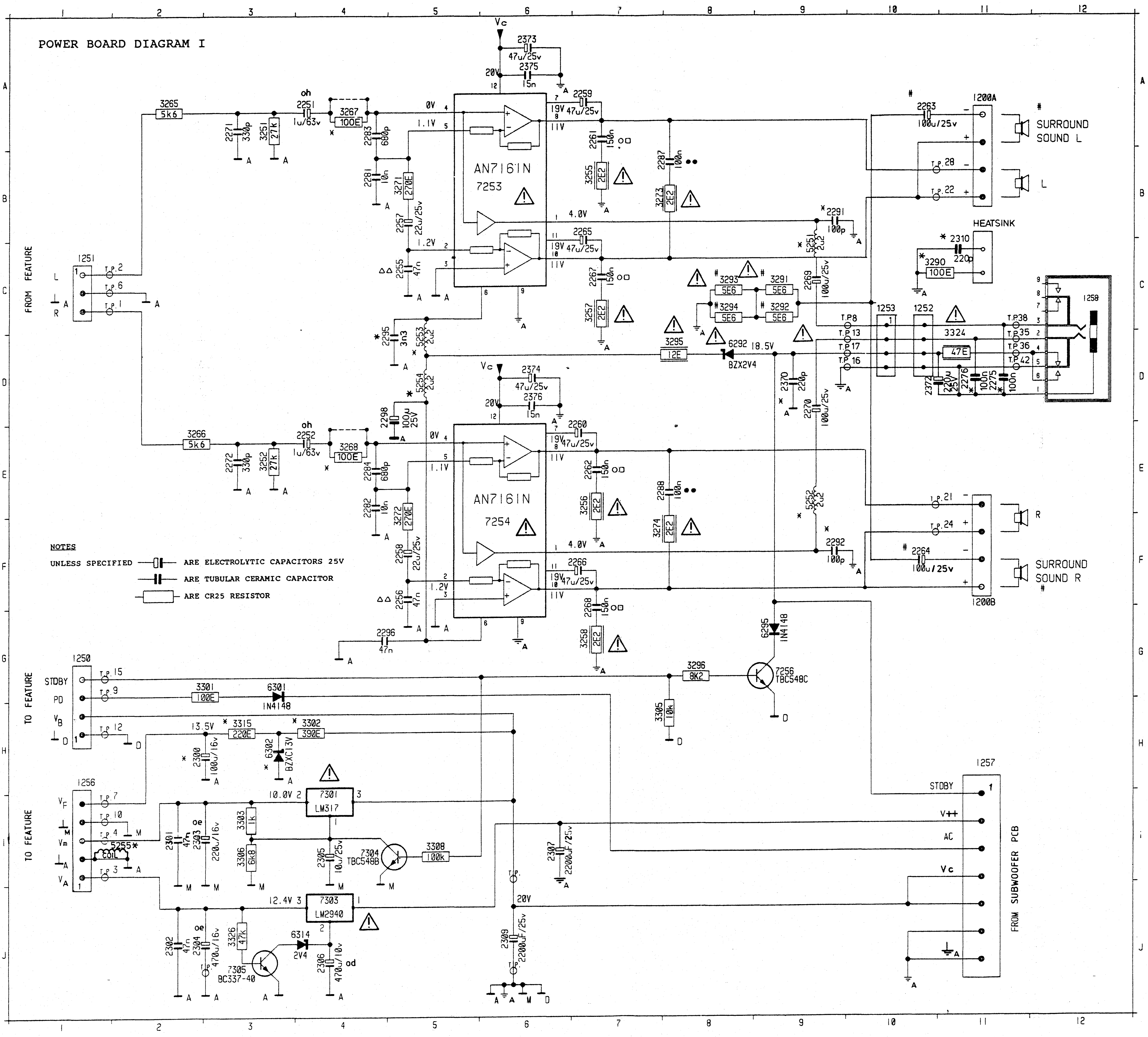
| 7253/54 | 7550 |
|---|---|
| 1 : 4.0V | 1 : 4.0V |
| 2 : 1.2V | 2 : 4.0V |
| 3 : 0V | 3 : 4.0V |
| 4 : 0V | 4 : 0V |
| 5 : 1.1V | 5 : 4.0V |
| 6 : 20.0V | 6 : 4.0V |
| 7 : 19.0V | 7 : 4.0V |
| 8 : 11.0V | 8 : 12.0V |
| 9 : 0V | |
| 10 : 11.0V | |
| 11 : 19.0V | |
| 12 : 20.0V | |

| 7301 | 7303 | 7553 |
|---|---|---|
| 1 : 8.8V | 1 : 20.0V | e : 0.14V<br>4.4V |
| 2 : 10.0V | 2 : 2.75V | b : 0.25V<br>5.0V |
| 3 : 20.0V | 3 : 12.5V | c : 12.5V<br>12.5V |

....V measured in CD mode, power on position

V measured in cassette mode, power on position

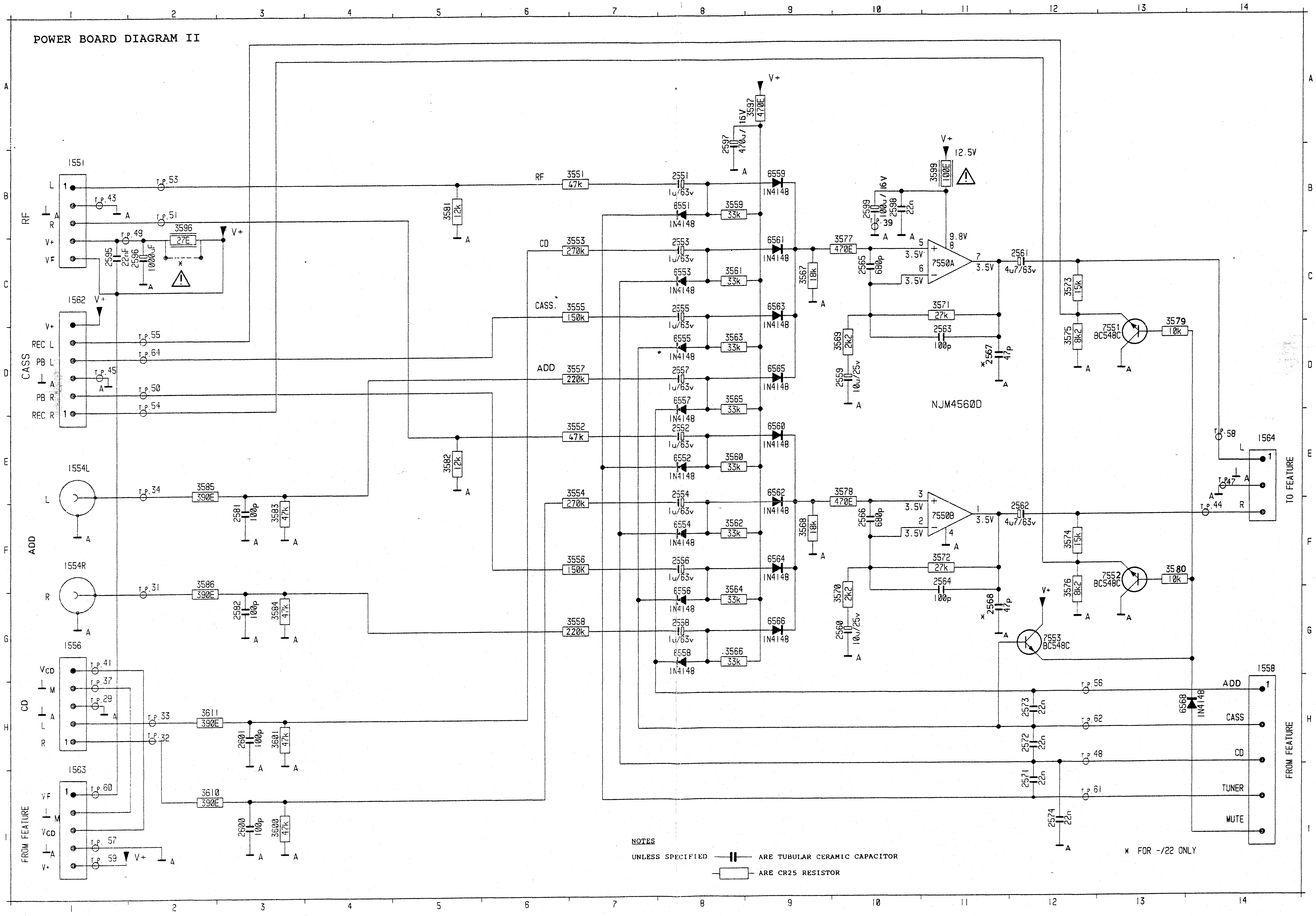
## POWER BOARD DIAGRAM I



1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J
Vc
2373
47u/25v
2375
15n
20V
12
2259
47u/25v
19V
11V
AN7161N
7253
AN7161N
7254
3265
5k6
3266
5k6
2251
1u/63v
2252
1u/63v
oh
3267
100E
3268
100E
2271
330p
2272
330p
3251
27k
3252
27k
2283
680p
2284
680p
2281
10n
2282
10n
3271
270E
3272
270E
2257
22u/25v
2258
22u/25v
2255
47n
2256
47n
0V
1.1V
1.2V
4.0V
2261
150n
2262
150n
2267
150n
2268
150n
oo
3255
2E2
3256
2E2
3257
2E2
3258
2E2
2287
100n
2288
100n
3273
2E2
3274
2E2
2265
47u/25v
2266
47u/25v
2260
47u/25v
2291
100p
2292
100p
5251
2u2
5252
2u2
5253
2u2
5254
2u2
2295
3n3
2298
100u
25V
2296
47n
2374
47u/25v
2376
15n
FROM FEATURE
1251
L
R
T.P.2
T.P.6
T.P.1
3293
5E6
3291
5E6
3294
5E6
3292
5E6
2269
100u/25v
2270
100u/25v
3295
12E
6292
BZX2V4
18.5V
2370
220p
1253
1252
3324
47E
2372
220u
25V
2276
100n
2275
100n
T.P.8
T.P.13
T.P.17
T.P.16
T.P.38
T.P.35
T.P.36
T.P.42
1258
HEATSINK
2310
220p
3290
100E
2263
100u/25v
1200A
T.P.28
T.P.22
SURROUND
SOUND L
L
T.P.21
T.P.24
R
2264
100u/25v
SURROUND
SOUND R
1200B
#
*
NOTES
UNLESS SPECIFIED
ARE ELECTROLYTIC CAPACITORS 25V
ARE TUBULAR CERAMIC CAPACITOR
ARE CR25 RESISTOR
TO FEATURE
1250
STDBY
PD
V_B
T.P.15
T.P.9
T.P.12
3301
100E
6301
1N4148
13.5V
3315
220E
3302
390E
2300
100u/16v
6302
BZXC13V
3296
8K2
7256
TBC548C
3305
10k
6295
1N4148
1256
V_F
Vm
V_A
T.P.7
T.P.10
T.P.4
T.P.3
5255
COIL
2301
47n
2303
220u/16v
oe
7301
LM317
10.0V
3303
1k
3306
6k8
2305
10u/25v
7304
TBC548B
3308
100k
2307
2200uF/25v
7303
LM2940
12.4V
2302
47n
2304
470u/16v
3326
47k
7305
BC337-40
6314
2V4
2306
470u/10v
od
2309
2200uF/25v
20V
1257
STDBY
V++
AC
Vc
FROM SUBWOOFER PCB
A
D
M

| | |
|---|---|
| 1200A | A11 |
| 1200B | F11 |
| 1250 | G 1 |
| 1251 | C 1 |
| 1252 | C11 |
| 1253 | C11 |
| 1256 | H 1 |
| 1257 | H11 |
| 1258 | C12 |
| 2251 | A 4 |
| 2252 | E 4 |
| 2255 | C 5 |
| 2256 | F 5 |
| 2257 | B 5 |
| 2258 | F 5 |
| 2259 | A 7 |
| 2260 | E 7 |
| 2261 | A 7 |
| 2262 | E 7 |
| 2263 | A10 |
| 2264 | F10 |
| 2265 | B 7 |
| 2266 | F 7 |
| 2267 | C 7 |
| 2268 | F 7 |
| 2269 | C 9 |
| 2270 | D 9 |
| 2271 | A 3 |
| 2272 | E 3 |
| 2281 | B 4 |
| 2282 | E 4 |
| 2283 | A 4 |
| 2284 | E 4 |
| 2287 | B 8 |
| 2288 | E 8 |
| 2291 | B 9 |
| 2292 | F 9 |
| 2295 | D 5 |
| 2296 | G 4 |
| 2298 | D 4 |
| 2300 | H 2 |
| 2301 | I 2 |
| 2302 | J 2 |
| 2303 | I 2 |
| 2304 | J 2 |
| 2305 | I 4 |
| 2306 | J 4 |
| 2307 | I 6 |
| 2309 | J 6 |
| 2372 | D10 |
| 2373 | A 6 |
| 2374 | D 6 |
| 2375 | A 6 |
| 2376 | D 6 |
| 2370 | D 9 |
| 3251 | A 3 |
| 3252 | E 3 |
| 3255 | B 7 |
| 3256 | E 7 |
| 3257 | C 7 |
| 3258 | G 7 |
| 3265 | A 2 |
| 3266 | E 2 |
| 3267 | A 4 |
| 3268 | E 4 |
| 3271 | B 5 |
| 3272 | E 5 |
| 3273 | B 7 |
| 3274 | F 7 |
| 3291 | C 9 |
| 3292 | C 9 |
| 3293 | C 8 |
| 3294 | C 8 |
| 3295 | D 8 |
| 3296 | G 8 |
| 3301 | G 3 |
| 3302 | H 4 |
| 3303 | I 3 |
| 3305 | H 7 |
| 3306 | I 3 |
| 3308 | I 5 |
| 3315 | H 3 |
| 3324 | D11 |
| 3326 | J 3 |
| 5251 | C 9 |
| 5252 | E 9 |
| 5253 | D 5 |
| 5254 | D 5 |
| 6292 | D 8 |
| 6295 | G 9 |
| 6301 | G 3 |
| 6302 | H 3 |
| 6314 | J 4 |
| 7253 | B 5 |
| 7254 | F 6 |
| 7256 | G 9 |
| 7301 | I 4 |
| 7303 | J 4 |
| 7304 | I 4 |
| 7305 | J 3 |
| 2275 | D11 |
| 2276 | D11 |
| 2310 | C11 |
| 3290 | C10 |

# FOR -/37 ONLY
× FOR -/22 ONLY
⊥A SUPPLY GND
⊥D DIGITAL GND
⊥A SIGNAL GND
⊥M MOTOR GND


POWER BOARD DIAGRAM II
1551
RF
L
R
V+
VF
1562
CASS
REC L
PB L
PB R
REC R
1554L
1554R
ADD
1556
CD
VCD
M
1563
FROM FEATURE
1564
TO FEATURE
1558
FROM FEATURE
ADD
CASS
CD
TUNER
MUTE
7550A
7550B
NJM4560D
7551 BC548C
7552 BC548C
7553 BC548C
3551 47k
3552 47k
3553 270k
3554 270k
3555 150k
3556 150k
3557 220k
3558 220k
3559 33k
3560 33k
3561 33k
3562 33k
3563 33k
3564 33k
3565 33k
3566 33k
3567 18k
3568 18k
3569 2k2
3570 2k2
3571 27k
3572 27k
3573 15k
3574 15k
3575 8k2
3576 8k2
3577 470E
3578 470E
3579 10k
3580 10k
3581 12k
3582 12k
3583 47k
3584 47k
3585 390E
3586 390E
3596 27E
3597 470E
3599 100E
3600 47k
3601 47k
3610 390E
3611 390E
2551 1u/63v
2561 4u7/63v
2562 4u7/63v
2563 100p
2564 100p
2565 680p
2566 680p
2567 47p
2568 47p
2559 10u/25v
2560 10u/25v
2571 22n
2572 22n
2573 22n
2574 22n
2581 100p
2582 100p
2595 22nF
2596 1000uF
2597 470u/16V
2598 22n
2599 100u/16V
2600 100p
2601 100p
6559 IN4148
6568 IN4148
12.5V
9.8V
3.5V
V+
A
* FOR -/22 ONLY

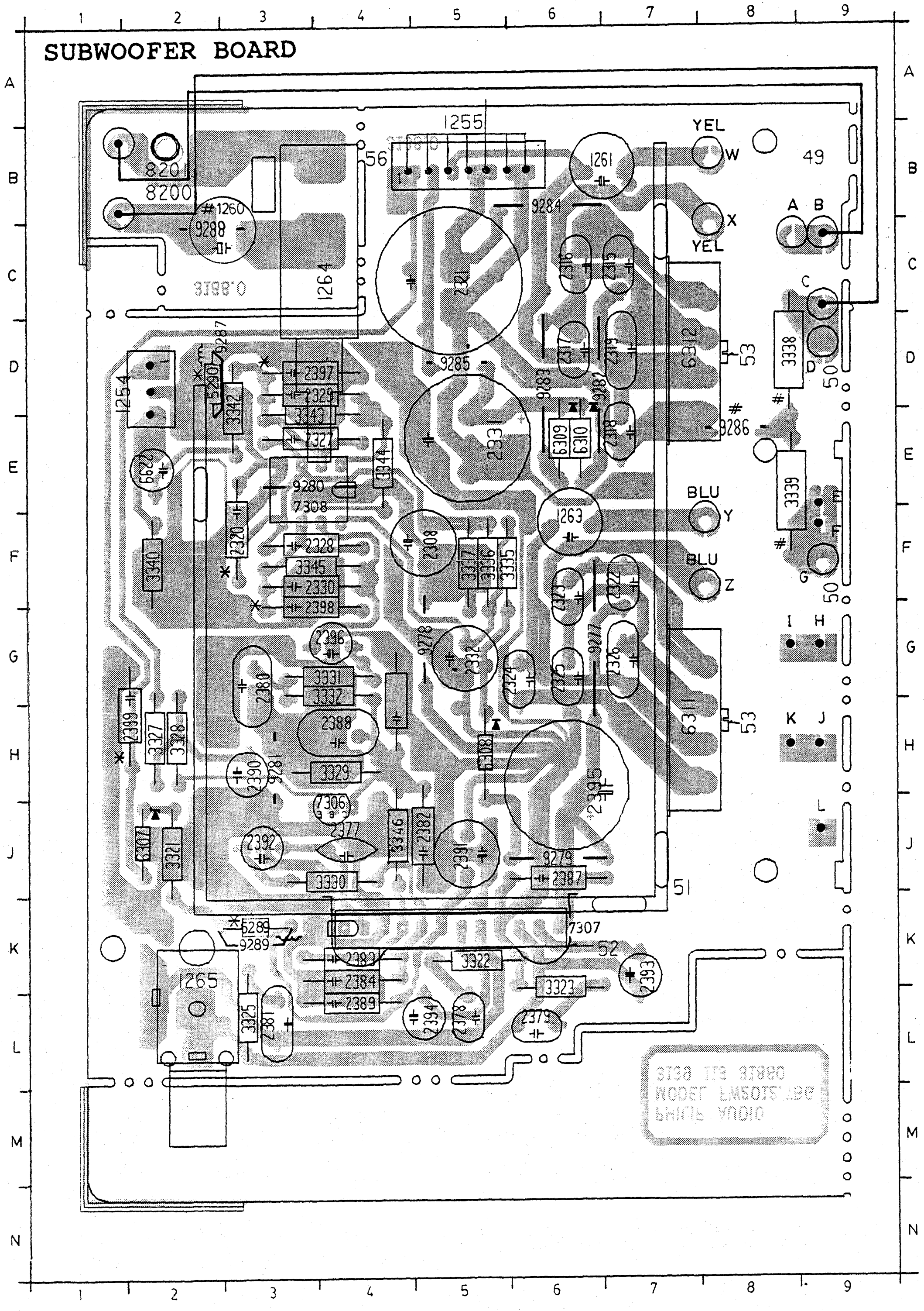
NOTES

UNLESS SPECIFIED —‖— ARE TUBULAR CERAMIC CAPACITOR

—▭— ARE CR25 RESISTOR

| | |
|---|---|
| 1551 | B 1 |
| 1556 | G 1 |
| 1558 | G14 |
| 1562 | C 1 |
| 1563 | I 1 |
| 1564 | E14 |
| 2551 | B 8 |
| 2552 | E 8 |
| 2553 | C 8 |
| 2554 | E 8 |
| 2555 | C 8 |
| 2556 | F 8 |
| 2557 | D 8 |
| 2558 | G 8 |
| 2559 | D10 |
| 2560 | G10 |
| 2561 | C12 |
| 2562 | F12 |
| 2563 | D11 |
| 2564 | F11 |
| 2565 | C10 |
| 2566 | F10 |
| 2571 | I12 |
| 2572 | H12 |
| 2573 | H12 |
| 2574 | I12 |
| 2581 | F 3 |
| 2582 | G 3 |
| 2595 | C 1 |
| 2596 | C 2 |
| 2597 | A 8 |
| 2598 | B10 |
| 2599 | B10 |
| 2600 | I 3 |
| 2601 | H 3 |
| 3551 | B 7 |
| 3552 | E 7 |
| 3553 | C 7 |
| 3554 | E 7 |
| 3555 | C 7 |
| 3556 | F 7 |
| 3557 | D 7 |
| 3558 | G 7 |
| 3559 | B 8 |
| 3560 | E 8 |
| 3561 | C 8 |
| 3562 | F 8 |
| 3563 | D 8 |
| 3564 | G 8 |
| 3565 | D 8 |
| 3566 | G 8 |
| 3567 | C 9 |
| 3568 | F 9 |
| 3569 | D10 |
| 3570 | G10 |
| 3571 | C11 |
| 3572 | F11 |
| 3573 | C12 |
| 3574 | F12 |
| 3575 | D12 |
| 3576 | G12 |
| 3577 | C10 |
| 3578 | E10 |
| 3579 | D13 |
| 3580 | F13 |
| 3581 | B 5 |
| 3582 | E 5 |
| 3583 | F 3 |
| 3584 | G 3 |
| 3585 | E 2 |
| 3586 | F 2 |
| 3596 | B 2 |
| 3597 | A 9 |
| 3599 | B11 |
| 3600 | I 3 |
| 3601 | H 3 |
| 3610 | I 2 |
| 3611 | H 2 |
| 6551 | B 8 |
| 6552 | E 8 |
| 6553 | C 8 |
| 6554 | F 8 |
| 6555 | D 8 |
| 6556 | G 8 |
| 6557 | D 8 |
| 6558 | G 8 |
| 6559 | B 9 |
| 6560 | E 9 |
| 6561 | C 9 |
| 6562 | E 9 |
| 6563 | C 9 |
| 6564 | F 9 |
| 6565 | D 9 |
| 6566 | G 9 |
| 6568 | H14 |
| 7550A | C11 |
| 7550B | F11 |
| 7551 | D13 |
| 7552 | F13 |
| 7553 | G12 |
| 2567 | D11 |
| 2568 | G11 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0048 | K2 | 1264 | C4 | 2326 | G7 | 2387 | J6 | 3323 | K6 | 3343 | D3 | 8200 | B2 |
| 0049 | B9 | 1265 | K2 | 2327 | E3 | 2388 | H4 | 3325 | L3 | 3344 | E4 | 8201 | B2 |
| 0050 | D9 | 2299 | E2 | 2328 | F3 | 2389 | L4 | 3327 | H2 | 3345 | F3 | 9277 | G6 |
| 0050 | F9 | 2308 | F5 | 2329 | D3 | 2390 | H3 | 3328 | H2 | 3346 | J4 | 9278 | G5 |
| 0051 | J7 | 2315 | C7 | 2330 | F3 | 2391 | J5 | 3329 | H4 | 5289 | K3 | 9279 | J6 |
| 0052 | K6 | 2316 | C6 | 2331 | E5 | 2392 | J3 | 3330 | J4 | 5290 | D2 | 9280 | E3 |
| 0053 | D8 | 2317 | D6 | 2332 | G5 | 2393 | K7 | 3331 | G4 | 6307 | J2 | 9281 | H3 |
| 0053 | H8 | 2318 | E7 | 2377 | J4 | 2394 | L5 | 3332 | G4 | 6308 | H5 | 9282 | D7 |
| 0056 | B4 | 2319 | D7 | 2378 | L5 | 2395 | H6 | 3335 | F5 | 6309 | E6 | 9283 | D6 |
| 1254 | D1 | 2320 | F3 | 2379 | L6 | 2396 | G4 | 3336 | F5 | 6310 | E6 | 9284 | B6 |
| 1255 | A5 | 2321 | C5 | 2380 | G3 | 2397 | D3 | 3337 | F5 | 6311 | H7 | 9285 | D5 |
| 1260 | B2 | 2322 | F7 | 2381 | L3 | 2398 | F3 | 3338 | D8 | 6312 | D7 | 9286 | E8 |
| 1260 | B3 | 2323 | F6 | 2382 | J5 | 2399 | H1 | 3339 | E8 | 7306 | J4 | 9287 | J4 |
| 1261 | B6 | 2324 | G5 | 2383 | K4 | 3321 | J2 | 3340 | F2 | 7307 | K6 | 9288 | B2 |
| 1263 | F6 | 2325 | G6 | 2384 | K4 | 3322 | K5 | 3342 | D3 | 7308 | E3 | 9289 | K3 |


SUBWOOFER BOARD
1255
1254
1264
1265
1260
1261
1263
8200
8201
YEL
BLU
W
X
Y
Z
A
B
C
G
H
I
J
K
L
49
50
51
52
53
56
7306
7307
7308
6307
6308
6309
6310
6311
6312
3138 119 3198O
MODEL EMS01S.?80
PHILIPS AUDIO

NOTE
✱ FOR -/22 ONLY
# FOR -/37 ONLY

V++ : 20.0V

7161

1 : 3.9V
2 : 1.3V
3 : 0V
4 : 0.75V
5 : 1.3V
6 : 17.6V
7 : 16.8V
8 : 4.7V
9 : 0V
10 : 9.7V
11 : 16.8V
12 : 17.4V

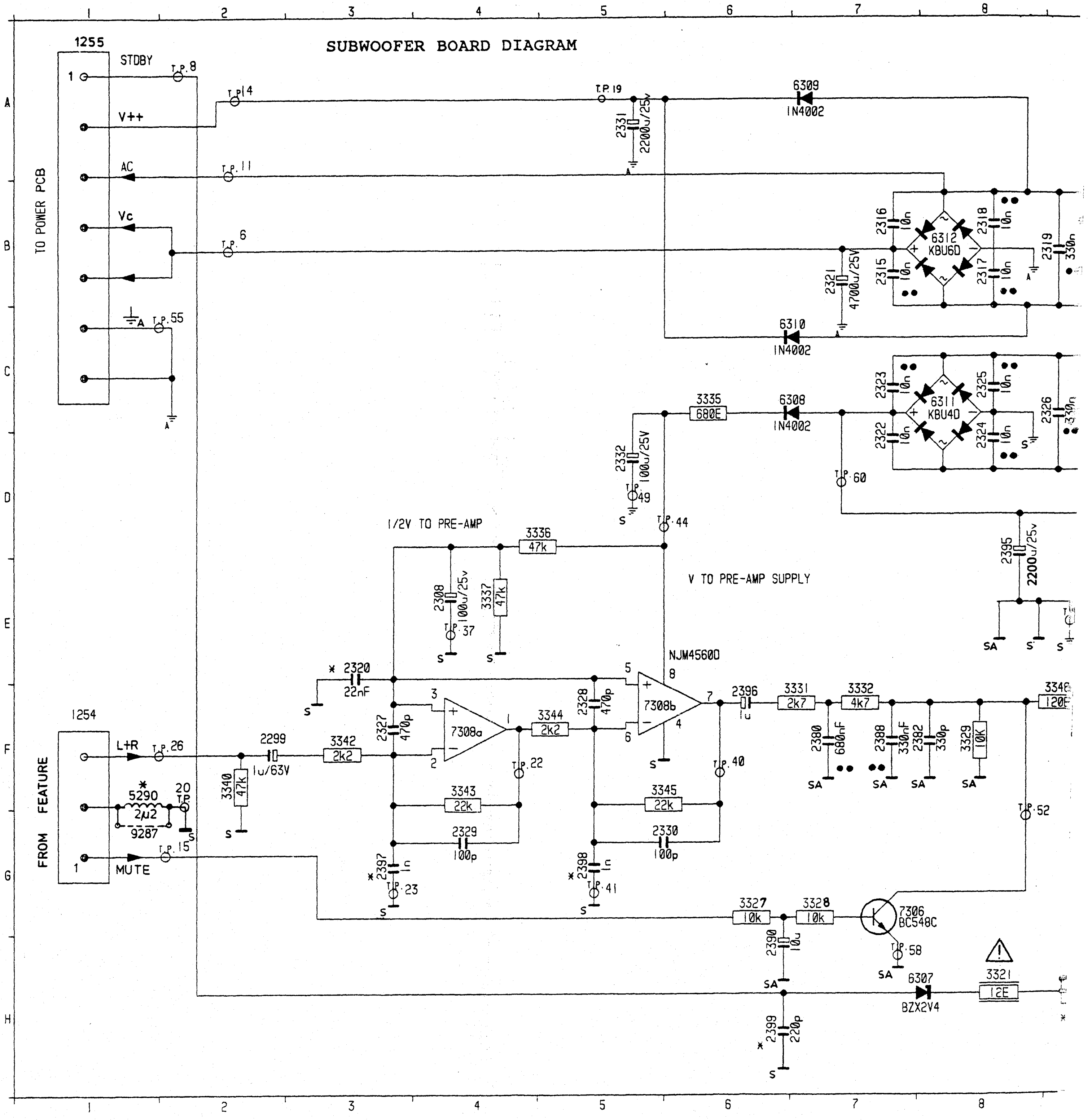
7550

1 : 7.0V
2 : 7.0V
3 : 7.0V
4 : 0V
5 : 7.0V
6 : 7.0V
7 : 7.0V
8 : 14.0V

....V

measured in CD mode, power on position

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1254** | **F 1** | 1264 | D11 | 2299 | F 2 | 2317 | B 8 | 2321 | B 7 | 2325 | C 8 | 2329 | G 4 | 2377 | G 9 | 2381 | F11 | 2387 | E10 | 2391 | H10 | 2395 | D 8 | 2399 | H 6 |
| **1255** | **A 1** | 1264 | D13 | 2308 | E 4 | 2318 | B 8 | 2322 | D 7 | 2326 | C 9 | 2330 | G 6 | 2378 | F11 | 2382 | F 8 | 2388 | F 7 | 2392 | G 9 | 2396 | F 6 | 3321 | H 8 |
| 1261 | B 9 | 1264 | D15 | 2315 | B 7 | 2319 | B 9 | 2323 | C 7 | 2327 | F 3 | 2331 | A 5 | 2379 | H11 | 2383 | F 9 | 2389 | H 9 | 2393 | G11 | 2397 | G 3 | 3322 | G11 |
| 1263 | C 9 | 1265 | F12 | 2316 | B 7 | 2320 | E 3 | 2324 | D 8 | 2328 | F 5 | 2332 | D 5 | 2380 | F 7 | 2384 | F 9 | 2390 | H 6 | 2394 | F11 | 2398 | G 5 | 3323 | H11 |


SUBWOOFER BOARD DIAGRAM
1255
STDBY
V++
AC
Vc
TO POWER PCB
T.P.8
T.P.14
T.P.11
T.P.6
T.P.55
T.P.19
2331 2200u/25v
6309 1N4002
6310 1N4002
2316 10n
2318 10n
2315 10n
2317 10n
6312 KBU6D
2321 4700u/25v
2319 330n
2323 10n
2325 10n
2322 10n
2324 10n
6311 KBU4D
2326 330n
3335 680E
6308 1N4002
2332 100u/25v
T.P.49
T.P.44
T.P.60
1/2V TO PRE-AMP
3336 47k
2308 100u/25v
T.P.37
3337 47k
V TO PRE-AMP SUPPLY
2395 2200u/25v
NJM4560D
2320 22nF
7308a
7308b
2327 470p
2328 470p
3344 2k2
2396 1u
3331 2k7
3332 4k7
3346 120E
2380 680nF
2388 330nF
2382 330p
3329 10k
1254
L+R
T.P.26
2299 1u/63V
3342 2k2
3340 47k
5290 2u2
9287
20 T.P.
T.P.15
MUTE
FROM FEATURE
3343 22k
3345 22k
2329 100p
2330 100p
T.P.22
T.P.40
2397 1n
2398 1n
T.P.23
T.P.41
T.P.52
3327 10k
3328 10k
7306 BC548C
2390 10u
T.P.58
6307 BZX2V4
3321 12E
2399 220p
S
SA
A

NOTE:
✱ FOR -/22 & -/28
# FOR -/37 ONLY

A ⏚ POWER-AMP /SUPPLY GND
S ⏚ SUB-WOOFER OUTPUT GND
S ⊥ PRE-AMP INPUT GND
SA ⊥ SUB-WOOFER INPUT GND

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1254 | F 1 | 1264 | D11 | 2299 | F 2 | 2317 | B 8 | 2321 | B 7 | 2325 | C 8 | 2329 | G 4 | 2377 | G 9 | 2381 | F11 | 2387 | E10 | 2391 | H10 | 2395 | D 8 | 2399 | H 6 | 3325 | G11 | 3330 | F 9 | 3336 | D 5 | 3340 | F 2 | 3345 | F 6 | 6308 | C 7 | 6312 | B 8 | 7308b | F 5 |
| 1255 | A 1 | 1264 | D13 | 2308 | E 4 | 2318 | B 8 | 2322 | D 7 | 2326 | C 9 | 2330 | G 6 | 2378 | F11 | 2382 | F 8 | 2388 | F 7 | 2392 | G 9 | 2396 | F 6 | 3321 | H 8 | 3327 | G 6 | 3331 | F 7 | 3337 | E 4 | 3342 | F 3 | 3346 | F 9 | 6309 | A 7 | 7306 | G 7 | 1260 | A11 |
| 1261 | B 9 | 1264 | D15 | 2315 | B 7 | 2319 | B 9 | 2323 | C 7 | 2327 | F 3 | 2331 | A 5 | 2379 | H11 | 2383 | F 9 | 2389 | H 9 | 2393 | G11 | 2397 | G 3 | 3322 | G11 | 3328 | G 7 | 3332 | F 7 | 3338 | B11 | 3343 | F 4 | 5289 | H 9 | 6310 | C 7 | 7307 | G10 | 5290 | F 1 |
| 1263 | C 9 | 1265 | F12 | 2316 | B 7 | 2320 | E 3 | 2324 | D 8 | 2328 | F 5 | 2332 | D 5 | 2380 | F 7 | 2384 | F 9 | 2390 | H 6 | 2394 | F11 | 2398 | G 5 | 3323 | H11 | 3329 | F 8 | 3335 | C 6 | 3339 | C11 | 3344 | F 5 | 6307 | H 8 | 6311 | C 8 | 7308a | F 4 | 9287 | G 1 |

V++ : 20.0V

7161

1 : 3.9V
2 : 1.3V
3 : 0V
4 : 0.75V
5 : 1.3V
6 : 17.6V
7 : 16.8V
8 : 4.7V
9 : 0V
10 : 9.7V
11 : 16.8V
12 : 17.4V

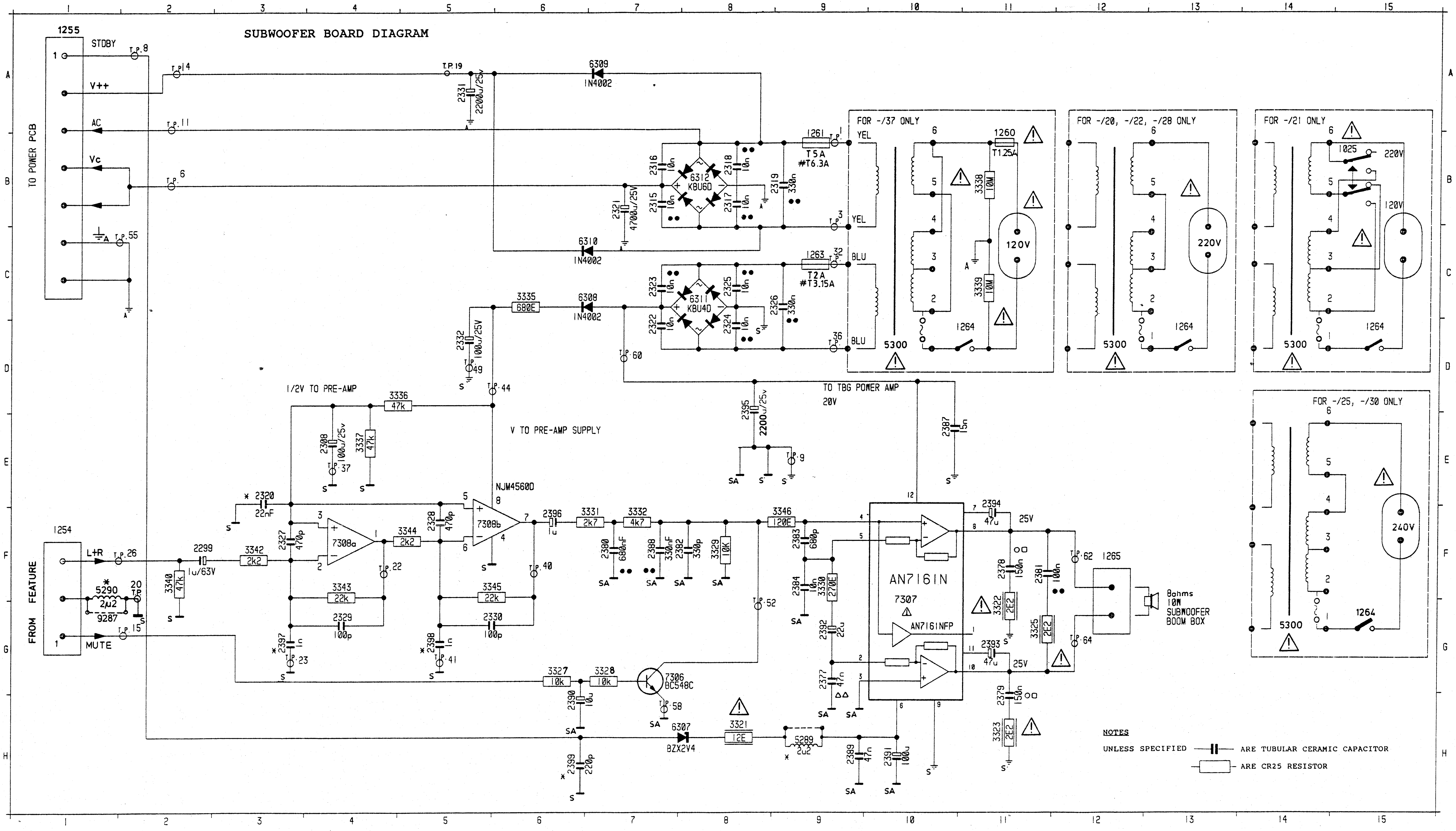
7550

1 : 7.0V
2 : 7.0V
3 : 7.0V
4 : 0V
5 : 7.0V
6 : 7.0V
7 : 7.0V
8 : 14.0V

....V

measured in
CD mode, power
on position

## SUBWOOFER BOARD DIAGRAM



1255
STDBY
T.P.8
V++
T.P.14
AC
T.P.11
Vc
T.P.6
T.P.55
TO POWER PCB
T.P.19
2331 2200u/25v
6309 1N4002
6310 1N4002
2316 10n
2315 10n
2318 10n
2317 10n
6312 KBU6D
2321 4700u/25V
2319 330n
1261 T5A #T6.3A
YEL
BLU
1263 T2A #T3.15A
2323 10n
2322 10n
2325 10n
2324 10n
6311 KBU4D
2326 330n
3335 680E
6308 1N4002
2332 100u/25V
T.P.49
T.P.44
T.P.60
FOR -/37 ONLY
1260 T125A
3338 10M
3339 10M
120V
5300
1264
FOR -/20, -/22, -/28 ONLY
220V
FOR -/21 ONLY
1025
220V
120V
FOR -/25, -/30 ONLY
240V
1/2V TO PRE-AMP
3336 47k
2308 100u/25v
3337 47k
T.P.37
V TO PRE-AMP SUPPLY
TO TBG POWER AMP
20V
2395 2200u/25v
2387 15n
T.P.9
NJM4560D
2320 22nF
2327 470p
7308a
3344 2k2
2328 470p
7308b
2396 1u
3331 2k7
3332 4k7
3346 120E
2383 680p
2380 680nF
2388 330nF
2382 330p
3329 10K
AN7161N
7307
AN7161NFP
2394 47u
25V
2393 47u
2378 150n
2381 100n
3322 2E2
3325 2E2
T.P.62
T.P.64
1265
8ohms 10W SUBWOOFER BOOM BOX
1254
FROM FEATURE
L+R
T.P.26
5290 2u2
9287
T.P.20
MUTE
T.P.15
2299 1u/63V
3340 47k
3342 2k2
T.P.22
3343 22k
2329 100p
2397 1c
T.P.23
3345 22k
2330 100p
2398 1c
T.P.41
T.P.40
T.P.52
2384 10n
3330 270E
2392 22u
2377 47n
3327 10k
3328 10k
2390 10u
7306 BC548C
T.P.58
6307 BZX2V4
3321 12E
5289 2u2
2389 47n
2391 100u
2379 150n
3323 2E2
2399 220p
SA
S
A

NOTES

UNLESS SPECIFIED —‖— ARE TUBULAR CERAMIC CAPACITOR

—▭— ARE CR25 RESISTOR

NOTE:

* FOR -/22 & -/28

# FOR -/37 ONLY

A ⏚ POWER-AMP /SUPPLY GND

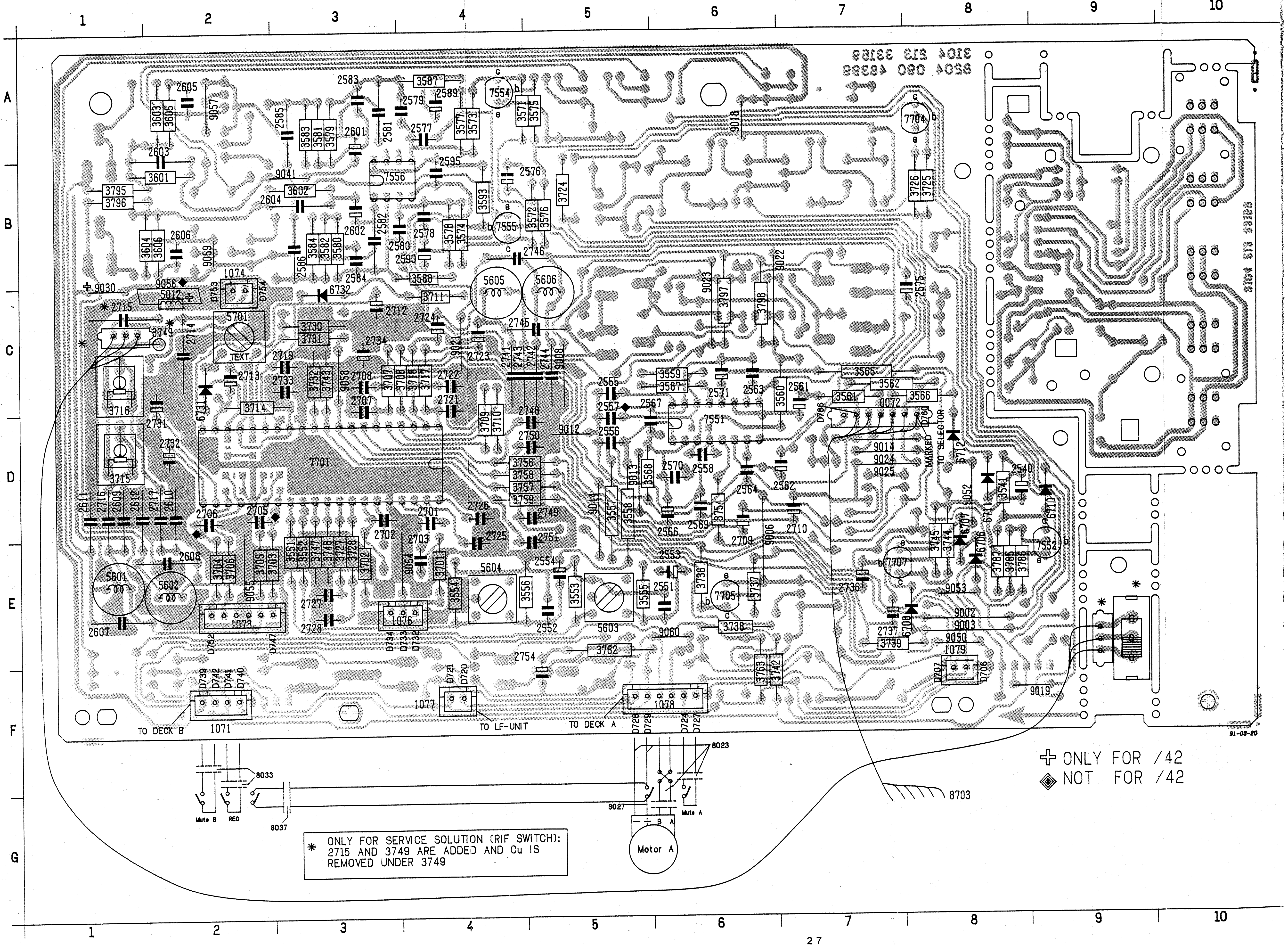
S ⏚ SUB-WOOFER OUTPUT GND

S ⊥ PRE-AMP INPUT GND

SA ⊥ SUB-WOOFER INPUT GND

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0072 | C 7 | 2727 | E 3 | 3724 | B 5 | 9044 | D 5 |
| 1071 | F 2 | 2728 | E 3 | 3725 | B 8 | 9050 | E 8 |
| 1073 | E 2 | 2731 | D 2 | 3726 | B 8 | 9052 | D 8 |
| 1074 | B 2 | 2732 | D 2 | 3727 | E 3 | 9053 | E 8 |
| 1076 | E 4 | 2733 | C 3 | 3728 | E 3 | 9054 | E 4 |
| 1077 | F 4 | 2734 | C 3 | 3730 | C 3 | 9055 | E 2 |
| 1078 | F 6 | 2736 | E 7 | 3731 | C 3 | 9056 | B 2 |
| 1079 | E 8 | 2737 | E 7 | 3732 | C 3 | 9057 | A 2 |
| 2540 | D 8 | 2741 | C 4 | 3736 | E 6 | 9058 | C 3 |
| 2551 | E 6 | 2742 | C 5 | 3737 | E 6 | 9059 | B 2 |
| 2552 | E 5 | 2743 | C 4 | 3738 | E 6 | 9060 | E 6 |
| 2553 | E 6 | 2744 | C 5 | 3739 | E 7 | | |
| 2554 | E 5 | 2745 | C 4 | 3742 | F 7 | | |
| 2555 | C 5 | 2746 | B 5 | 3743 | C 3 | | |
| 2556 | D 5 | 2748 | D 5 | 3744 | E 8 | | |
| 2557 | D 5 | 2749 | D 5 | 3745 | E 8 | | |
| 2558 | D 6 | 2750 | D 5 | 3747 | E 3 | | |
| 2561 | C 7 | 2751 | E 5 | 3748 | E 3 | | |
| 2562 | D 7 | 2754 | E 4 | 3749 | C 2 | | |
| 2563 | C 6 | 3541 | D 8 | 3754 | D 6 | | |
| 2564 | D 6 | 3551 | E 3 | 3756 | D 4 | | |
| 2566 | E 6 | 3552 | E 3 | 3757 | D 4 | | |
| 2567 | C 6 | 3553 | E 5 | 3758 | D 4 | | |
| 2569 | D 6 | 3554 | E 4 | 3759 | D 4 | | |
| 2570 | D 6 | 3555 | E 5 | 3762 | E 5 | | |
| 2571 | C 6 | 3556 | E 5 | 3763 | F 6 | | |
| 2575 | C 8 | 3557 | D 5 | 3785 | E 8 | | |
| 2576 | B 5 | 3558 | D 5 | 3786 | E 8 | | |
| 2577 | A 4 | 3559 | C 6 | 3787 | E 8 | | |
| 2578 | B 4 | 3560 | C 7 | 3795 | B 1 | | |
| 2579 | A 4 | 3561 | C 7 | 3796 | B 1 | | |
| 2580 | B 4 | 3562 | C 7 | 3797 | C 6 | | |
| 2581 | A 3 | 3565 | C 7 | 3798 | C 6 | | |
| 2582 | B 3 | 3566 | C 8 | 5012 | C 2 | | |
| 2583 | A 3 | 3567 | C 6 | 5601 | E 1 | | |
| 2584 | B 3 | 3568 | D 6 | 5602 | E 2 | | |
| 2585 | A 3 | 3571 | A 5 | 5603 | E 5 | | |
| 2586 | B 3 | 3572 | B 5 | 5604 | E 4 | | |
| 2589 | A 4 | 3573 | A 4 | 5605 | B 4 | | |
| 2590 | B 4 | 3574 | B 4 | 5606 | B 5 | | |
| 2595 | B 4 | 3575 | A 5 | 5701 | C 2 | | |
| 2601 | A 3 | 3576 | B 5 | 6706 | E 8 | | |
| 2602 | B 3 | 3577 | A 4 | 6707 | D 8 | | |
| 2603 | A 2 | 3578 | B 4 | 6708 | E 8 | | |
| 2604 | B 3 | 3579 | A 3 | 6710 | D 9 | | |
| 2605 | A 2 | 3580 | B 3 | 6711 | D 8 | | |
| 2606 | B 2 | 3581 | A 3 | 6712 | D 8 | | |
| 2607 | E 1 | 3582 | B 3 | 6731 | C 2 | | |
| 2608 | E 2 | 3583 | A 3 | 6732 | C 3 | | |
| 2609 | D 1 | 3584 | B 3 | 7551 | D 6 | | |
| 2610 | D 2 | 3587 | A 4 | 7552 | E 9 | | |
| 2611 | D 1 | 3588 | B 4 | 7554 | A 4 | | |
| 2612 | D 1 | 3593 | B 4 | 7555 | B 4 | | |
| 2701 | D 4 | 3601 | B 2 | 7556 | B 3 | | |
| 2702 | D 3 | 3602 | B 3 | 7701 | D 3 | | |
| 2703 | E 4 | 3603 | A 2 | 7704 | A 8 | | |
| 2705 | D 2 | 3604 | B 2 | 7705 | E 6 | | |
| 2706 | D 2 | 3605 | A 2 | 7707 | E 7 | | |
| 2707 | C 3 | 3606 | B 2 | 8703 | G 8 | | |
| 2708 | C 3 | 3701 | E 4 | 9002 | E 8 | | |
| 2709 | E 6 | 3702 | E 3 | 9003 | E 8 | | |
| 2710 | D 7 | 3703 | E 3 | 9006 | D 6 | | |
| 2712 | C 3 | 3704 | E 2 | 9008 | C 5 | | |
| 2713 | C 2 | 3705 | E 2 | 9012 | D 5 | | |
| 2714 | C 2 | 3706 | E 2 | 9013 | D 5 | | |
| 2715 | C 1 | 3707 | C 3 | 9014 | D 7 | | |
| 2716 | D 1 | 3708 | C 4 | 9018 | A 6 | | |
| 2717 | D 2 | 3709 | D 4 | 9019 | F 9 | | |
| 2719 | C 3 | 3710 | D 4 | 9021 | C 4 | | |
| 2721 | C 4 | 3711 | C 4 | 9022 | B 7 | | |
| 2722 | C 4 | 3714 | C 2 | 9023 | B 6 | | |
| 2723 | C 4 | 3715 | D 1 | 9024 | D 7 | | |
| 2724 | C 4 | 3716 | C 1 | 9025 | D 7 | | |
| 2725 | E 4 | 3717 | C 4 | 9030 | C 1 | | |
| 2726 | D 4 | 3718 | C 4 | 9041 | B 3 | | |

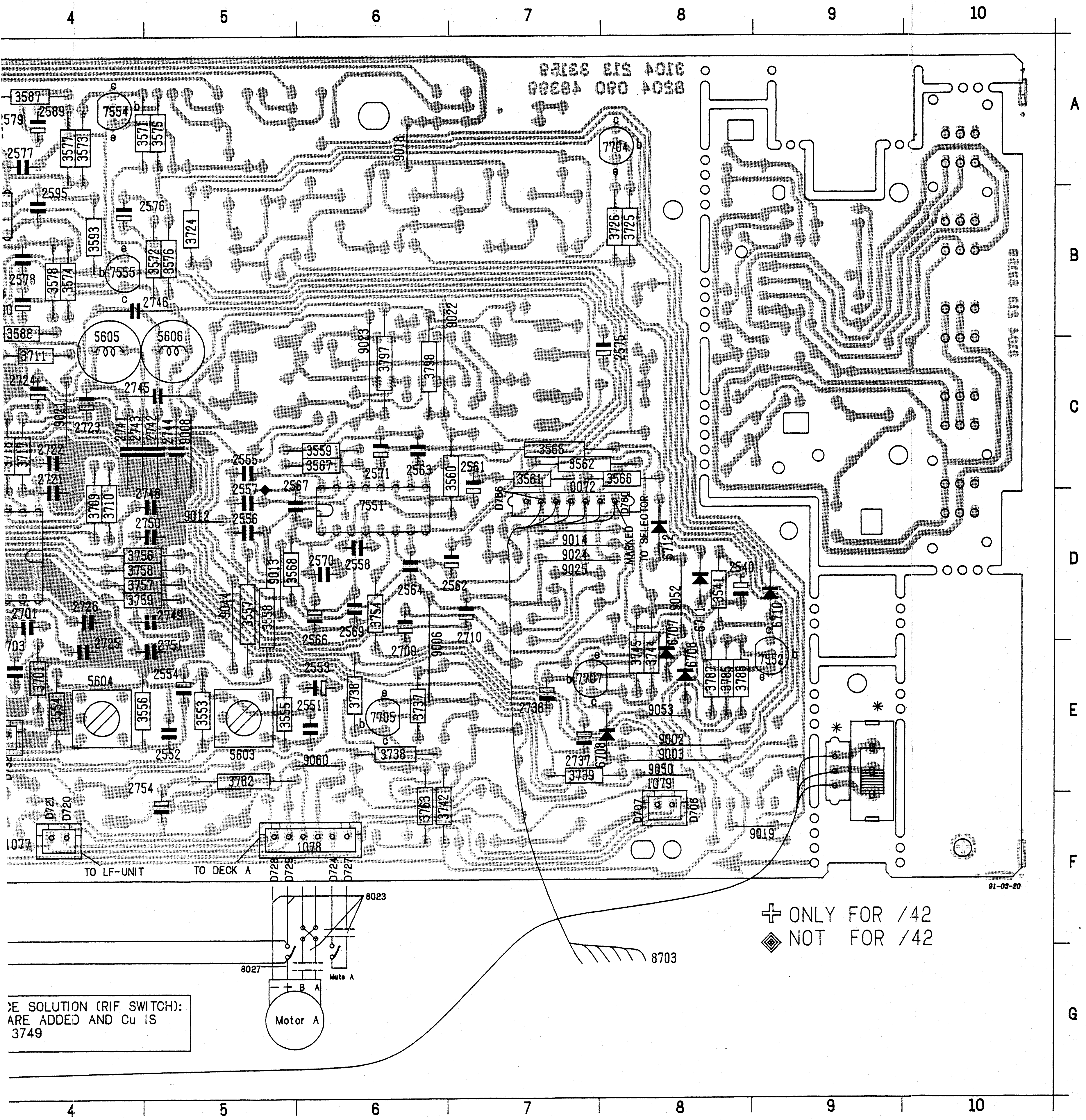
## RECORDER BOARD


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
7701
7551
7556
7554
7555
7704
7705
7707
7552
5601
5602
5603
5604
5605
5606
5701
TEXT
5012
1071
1073
1074
1076
1077
1078
1079
TO DECK B
TO LF-UNIT
TO DECK A
MARKED TO SELECTOR
8023
8027
8033
8037
8703
Mute B
REC
Mute A
Motor A
91-03-20

✱ ONLY FOR SERVICE SOLUTION (RIF SWITCH): 2715 AND 3749 ARE ADDED AND Cu IS REMOVED UNDER 3749

✣ ONLY FOR /42

◈ NOT FOR /42


3104 213 3316
8204 090 4838
TO LF-UNIT
TO DECK A
MARKED
TO SELECTOR
Motor A
Mute A
8023
8027
8703
91-03-20
ONLY FOR /42
NOT FOR /42
CE SOLUTION (RIF SWITCH):
ARE ADDED AND Cu IS
3749

| Adjust | Voltage across the Recording head |
|---|---|
| 3715 | 8.7mV |
| 3716 | 8.7mV |

7701

1 : 5.9V
2 : 5.9V
3 : 5.9V
4 : 5.9V
5 : 5.9V
6 : 5.9V
7 : 9.6V
0.1V
8 : 10.3V
0.1V
9 : 10.2V
10 : 0V
5.5Vrec
11 : 0.3V
12 : 5.9V
13 : 0V
14 : 11.7V
15 : 5.1V
16 : 11.7V
17 : 0V
18 : 11.0V
19 : 0.7V
20 : 11.7V
21 : 5.9V
22 : 5.9V
23 : 5.9V
24 : 5.9V
25 : 5.9V
26 : 5.9V
27 : 5.9V
28 : 5.9V
29 : 5.9V
30 : 5.9V
31 : 5.9V
32 : 6.0V
33 : 6.0V
34 : 5.9V
35 : 5.7V
36 : 5.9V
37 : 5.8V
38 : 5.9V
39 : 6.2V
40 : 6.2V

7551

1 : 5.9V
2 : 12.6V
3 : 5.9V
4 : 5.9V
5 : 0Vdn
12.7Vdf
6 : 5.9V
7 : 0.4V
8 : 5.9V
9 : 5.9V
10 : 0.4V
11 : 5.9V
12 : 0V
3.9Vrec
11.0V
13 : 12.0V
14 : 5.9V
15 : 0V
16 : 5.9V

7556

1 : 5.9V
2 : 5.9V
3 : 5.9V
4 : 0V
5 : 5.9V
6 : 5.9V
7 : 5.9V
8 : 12.6V

7704

e : 0V
b : 0V
0.7V
c : 12.4V
0.1V

7705

e : 0V
b : 0V
0.7V
c : 10.2V
0.1V

7707

e : 12.2rec
11.5V
0V
b : 11.9V
10.9V
0V
c : 0V
11.4V

7552

e : 0V
b : 0V
0.8rec
c : 11.6V
0.1Vrec

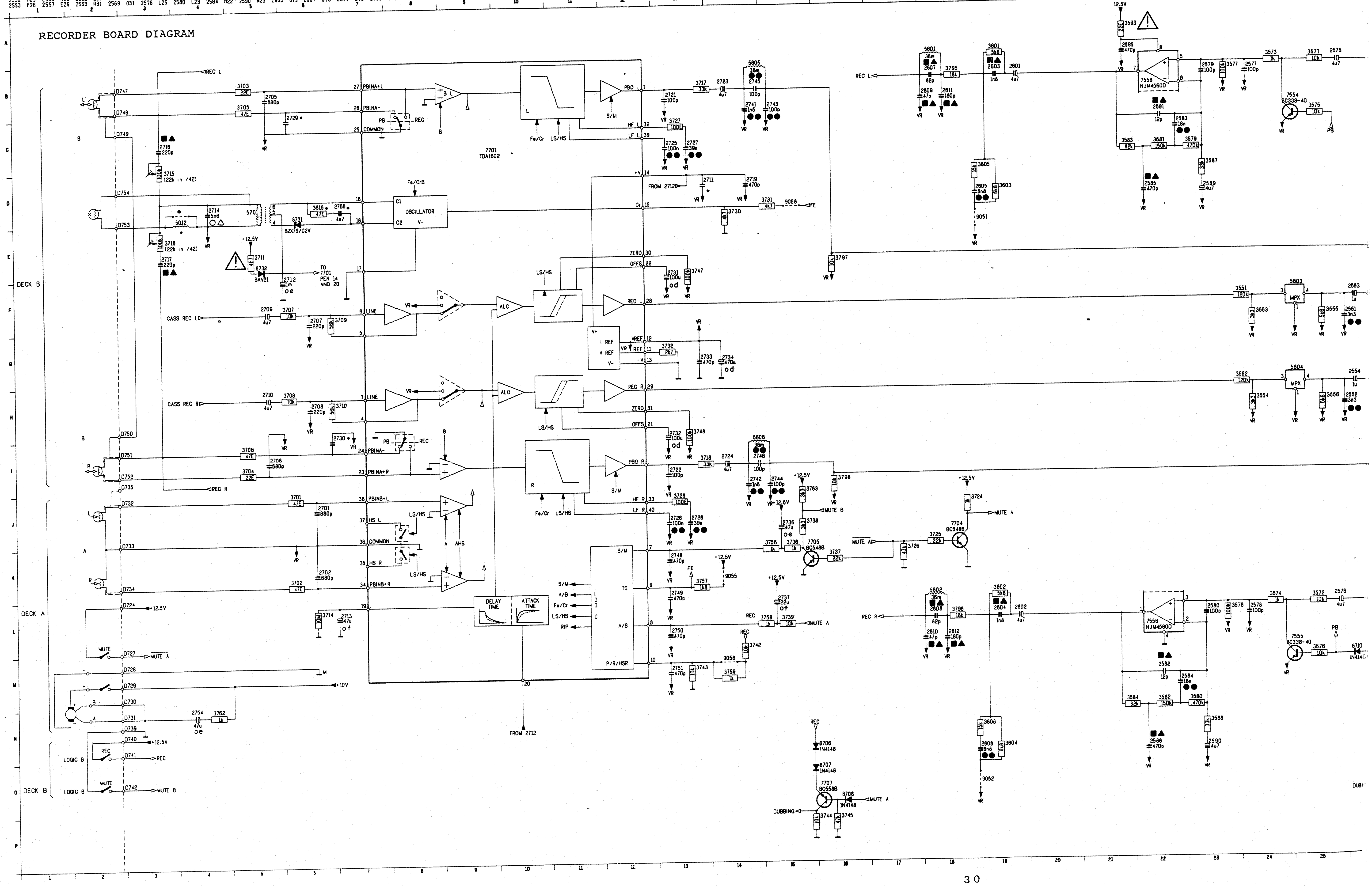
7555

e : 5.9V
b : 6.6V
0.3Vrec
c : 5.9V

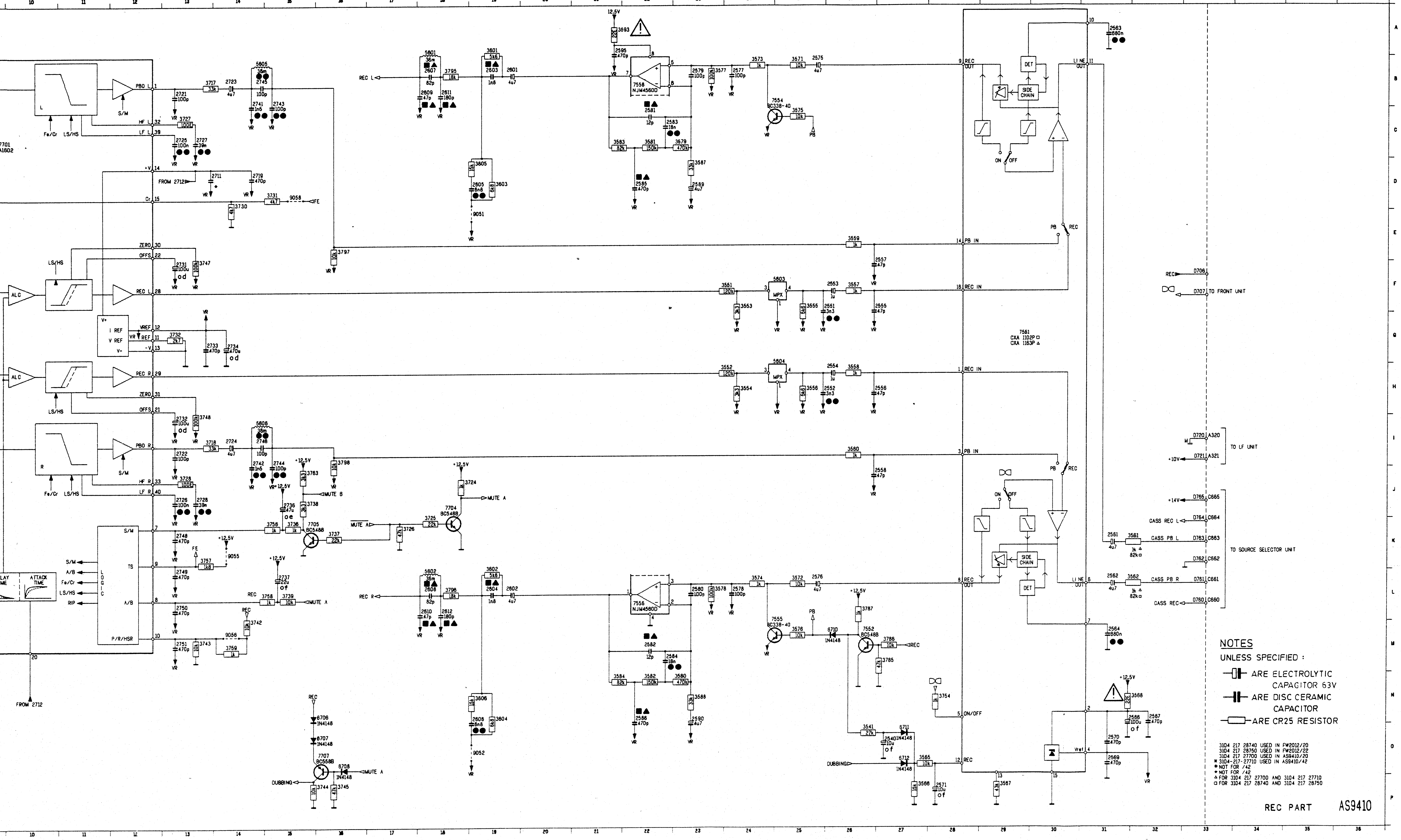
| | |
|---|---|
| ....V | measured in tape on position |
| V | measured in tape A play position |
| V | measured in tape dubbing on position |
| ....Vrec | measured in tape recording position |
| ....Vdn | measured in dolby on position |
| ....Vdf | measured in dobly off position |

| | |
|---|---|
| 2540 | 027 |
| 2551 | F25 |
| 2552 | H25 |
| 2553 | F26 |
| 2554 | H26 |
| 2555 | F26 |
| 2556 | H26 |
| 2557 | E26 |
| 2558 | J26 |
| 2561 | K31 |
| 2562 | L31 |
| 2563 | A31 |
| 2564 | M31 |
| 2566 | N31 |
| 2567 | A32 |
| 2569 | 031 |
| 2570 | 031 |
| 2571 | P28 |
| 2575 | B25 |
| 2576 | L25 |
| 2577 | B24 |
| 2578 | L24 |
| 2579 | B23 |
| 2580 | L23 |
| 2581 | C22 |
| 2582 | M22 |
| 2583 | C22 |
| 2584 | M22 |
| 2585 | D22 |
| 2586 | N22 |
| 2589 | D23 |
| 2590 | N23 |
| 2595 | A21 |
| 2601 | B19 |
| 2602 | L19 |
| 2603 | B19 |
| 2604 | L19 |
| 2605 | D18 |
| 2606 | N18 |
| 2607 | B18 |
| 2608 | L18 |
| 2609 | B17 |
| 2610 | L17 |
| 2611 | B18 |
| 2612 | L18 |
| 2701 | J 6 |
| 2702 | K 6 |
| 2705 | B 5 |
| 2706 | I 5 |
| 2707 | F 6 |
| 2708 | H 6 |
| 2709 | F 5 |
| 2710 | H 5 |
| 2711 | D13 |
| 2712 | E 5 |
| 2713 | L 6 |
| 2714 | D 4 |
| 2716 | C 3 |
| 2717 | E 3 |
| 2719 | D14 |
| 2721 | B13 |
| 2722 | I13 |
| 2723 | B14 |
| 2724 | I14 |
| 2725 | C13 |
| 2726 | J13 |
| 2727 | C13 |
| 2728 | J13 |
| 2729 | B 6 |
| 2730 | H 6 |
| 2731 | E13 |
| 2732 | H13 |
| 2733 | G13 |
| 2734 | G14 |
| 2736 | J15 |
| 2737 | L15 |
| 2741 | B14 |
| 2742 | I14 |
| 2743 | B15 |
| 2744 | I15 |
| 2745 | B14 |
| 2746 | I14 |
| 2748 | K13 |
| 2749 | K13 |
| 2750 | L13 |
| 2751 | M13 |
| 2754 | N 4 |
| 2765 | D 7 |
| 3541 | 026 |
| 3551 | F24 |
| 3552 | H24 |
| 3553 | F24 |
| 3554 | H24 |
| 3555 | F25 |
| 3556 | H25 |
| 3557 | F26 |
| 3558 | H26 |
| 3559 | E26 |
| 3560 | I26 |
| 3561 | K32 |
| 3562 | L32 |
| 3565 | 027 |
| 3566 | P27 |
| 3567 | P29 |
| 3568 | N31 |
| 3571 | B25 |
| 3572 | L25 |
| 3573 | B24 |
| 3574 | L24 |
| 3575 | C25 |
| 3576 | M25 |
| 3577 | B23 |
| 3578 | L23 |
| 3579 | C23 |
| 3580 | N23 |
| 3581 | C22 |
| 3582 | N22 |
| 3583 | C21 |
| 3584 | N21 |
| 3587 | D23 |
| 3588 | N23 |
| 3593 | A21 |
| 3601 | A19 |
| 3602 | K19 |
| 3603 | D19 |
| 3604 | N19 |
| 3605 | D19 |
| 3606 | N19 |
| 3615 | D 6 |
| 3701 | J 6 |
| 3702 | K 6 |
| 3703 | B 5 |
| 3704 | I 5 |
| 3705 | B 5 |
| 3706 | I 5 |
| 3707 | F 6 |
| 3708 | H 6 |
| 3709 | F 6 |
| 3710 | H 6 |
| 3711 | E 5 |
| 3714 | L 6 |
| 3715 | C 3 |
| 3716 | E 3 |
| 3717 | B13 |
| 3718 | I13 |
| 3724 | J18 |
| 3725 | J18 |
| 3726 | K17 |
| 3727 | C13 |
| 3728 | J13 |
| 3730 | D14 |
| 3731 | D15 |
| 3732 | G13 |
| 3736 | K15 |
| 3737 | K16 |
| 3738 | J15 |
| 3739 | L15 |
| 3742 | L14 |
| 3743 | M13 |
| 3744 | P15 |
| 3745 | P16 |
| 3747 | E13 |
| 3748 | H13 |
| 3754 | N28 |

# RECORDER BOARD DIAGRAM


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
A B C D E F G H I J K L M N O P
DECK B
DECK A
DECK B
LOGIC B
7701
TDA1602
OSCILLATOR
DELAY TIME
ATTACK TIME
ALC
LOGIC
7558
NJM4560D
7556
NJM4560D
5803
MPX
5804
MPX
7554
BC338-40
7555
BC338-40
7704
BC548B
7705
BC548B
7707
BC558B
REC L
REC R
CASS REC L
CASS REC R
MUTE A
MUTE B
FROM 2712
DUBBING
12.5V
+10V
Fe/CrB
S/M
LS/HS
PB
REC
VR

| | |
|---|---|
| | D 4 |
| | C 9 |
| | E 3 |
| | D14 |
| 2721 | B13 |
| 2722 | I13 |
| 2723 | B14 |
| 2724 | I14 |
| 2725 | C13 |
| 2726 | J13 |
| 2727 | C13 |
| 2728 | J13 |
| 2729 | B 6 |
| 2730 | H 6 |
| 2731 | E13 |
| 2732 | H13 |
| 2733 | G13 |
| 2734 | G14 |
| 2736 | J15 |
| 2737 | L15 |
| 2741 | B14 |
| 2742 | I14 |
| 2743 | B15 |
| 2744 | I15 |
| 2745 | B14 |
| 2746 | I14 |
| 2748 | K13 |
| 2749 | K13 |
| 2750 | L13 |
| 2751 | M13 |
| 2754 | N 4 |
| 2765 | D 7 |
| 3541 | O26 |
| 3551 | F24 |
| 3552 | H24 |
| 3553 | F24 |
| 3554 | H24 |
| 3555 | F25 |
| 3556 | H25 |
| 3557 | F26 |
| 3558 | H26 |
| 3559 | E26 |
| 3560 | I26 |
| 3561 | K32 |
| 3562 | L32 |
| 3565 | O27 |
| 3566 | P27 |
| 3567 | P29 |
| 3568 | N31 |
| 3571 | B25 |
| 3572 | L25 |
| 3573 | B24 |
| 3574 | L24 |
| 3575 | C25 |
| 3576 | M25 |
| 3577 | B23 |
| 3578 | L23 |
| 3579 | C23 |
| 3580 | N23 |
| 3581 | C22 |
| 3582 | N22 |
| 3583 | C21 |
| 3584 | N21 |
| 3587 | D23 |
| 3588 | N23 |
| 3593 | A21 |
| 3601 | A19 |
| 3602 | K19 |
| 3603 | D19 |
| 3604 | N19 |
| 3605 | D19 |
| 3606 | N19 |
| 3615 | D 6 |
| 3701 | J 6 |
| 3702 | K 6 |
| 3703 | B 5 |
| 3704 | I 5 |
| 3705 | B 5 |
| 3706 | I 5 |
| 3707 | F 6 |
| 3708 | H 6 |
| 3709 | F 6 |
| 3710 | H 6 |
| 3711 | E 5 |
| 3714 | L 6 |
| 3715 | C 3 |
| 3716 | E 3 |
| 3717 | B13 |
| 3718 | I13 |
| 3724 | J18 |
| 3725 | J18 |
| 3726 | K17 |
| 3727 | C13 |
| 3728 | J13 |
| 3730 | D14 |
| 3731 | D15 |
| 3732 | G13 |
| 3736 | K15 |
| 3737 | K16 |
| 3738 | J15 |
| 3739 | L15 |
| 3742 | L14 |
| 3743 | M13 |
| 3744 | P15 |
| 3745 | P16 |
| 3747 | E13 |
| 3748 | H13 |
| 3754 | N28 |
| 3756 | K15 |
| 3757 | K13 |
| 3758 | L15 |
| 3759 | M14 |
| 3762 | N 4 |
| 3763 | J15 |
| 3785 | M27 |
| 3786 | M27 |
| 3787 | L26 |
| 3795 | B18 |
| 3796 | L18 |
| 3797 | E16 |
| 3798 | I16 |
| 5012 | D 4 |
| 5601 | A18 |
| 5602 | K18 |
| 5603 | F25 |
| 5604 | G25 |
| 5605 | B14 |
| 5606 | I14 |
| 5701 | D 5 |
| 6706 | N15 |
| 6707 | O15 |
| 6708 | O16 |
| 6710 | M26 |
| 6711 | O27 |
| 6712 | O27 |
| 6731 | D 6 |
| 6732 | E 5 |
| 7551 | G29 |
| 7552 | M26 |
| 7554 | B25 |
| 7555 | L25 |
| 7556 | B22 |
| 7556 | L22 |
| 7701 | C 9 |
| 7704 | J18 |
| 7705 | K15 |
| 7707 | O16 |
| 9051 | E18 |
| 9052 | O18 |
| 9055 | K14 |
| 9056 | M14 |
| 9058 | D15 |


REC L
REC R
PBO L
PBO R
HF L
LF L
HF R
LF R
S/M
Fe/Cr
LS/HS
ALC
I REF
V REF
VREF
ZERO
OFFS
REC L
REC R
FROM 2712
FROM 2712
TS
A/B
P/R/HSR
RIP
ATTACK TIME
MUTE A
MUTE B
DUBBING
NJM4560D
7556
7554 BC338-40
7555 BC338-40
7552 BC548B
7704 BC548B
7705 BC548B
7707 BC558B
MPX
DET
SIDE CHAIN
ON
OFF
PB
REC
REC OUT
LINE OUT
PB IN
REC IN
ON/OFF
Vref
7551
CXA 1102P □
CXA 1163P △
TO FRONT UNIT
TO LF UNIT
TO SOURCE SELECTOR UNIT
CASS REC L
CASS PB L
CASS PB R
CASS REC
+14V
+10V
12.5V
+12.5V
VR

## NOTES

UNLESS SPECIFIED :

ARE ELECTROLYTIC CAPACITOR 63V

ARE DISC CERAMIC CAPACITOR

ARE CR25 RESISTOR

3104 217 28740 USED IN FW2012/20
3104 217 28750 USED IN FW2012/22
3104 217 27700 USED IN AS9410/20
✱ 3104-217-27710 USED IN AS9410/42
* NOT FOR /42
◆ NOT FOR /42
△ FOR 3104 217 27700 AND 3104 217 27710
□ FOR 3104 217 28740 AND 3104 217 28750

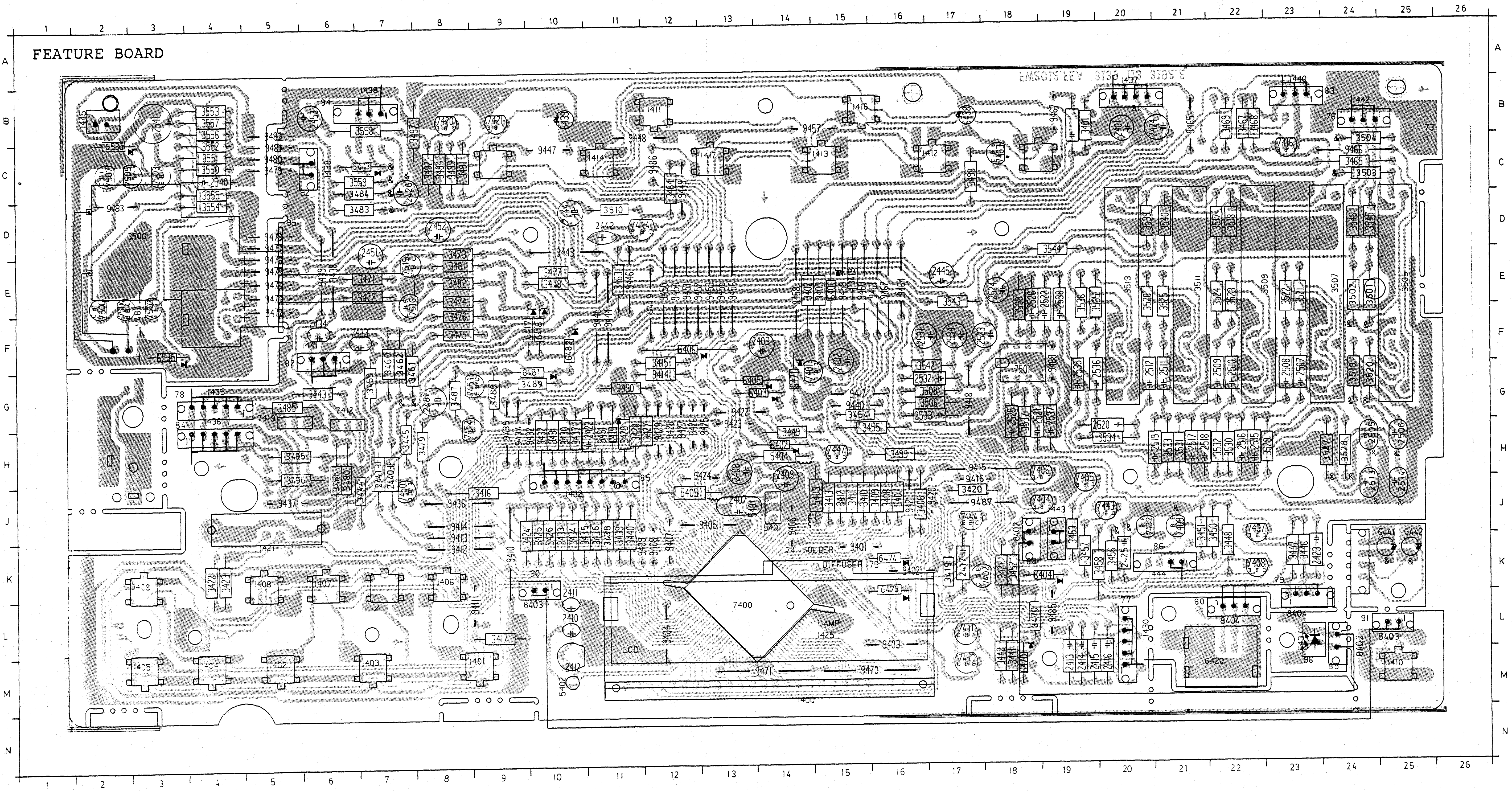
REC PART AS9410

30

31

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0073 | B25 | 1404 | M4 | 1437 | B20 | 2424 | B20 | 2518 | H21 | 3410 | J15 | 3437 | H10 | 3463 | E11 | 3491 | C8 | 3521 | E23 | 3552 | B4 | 6438 | B17 | 7419 | G5 | 9408 | K12 | 9436 | J8 | 9465 | B21 |
| 0074 | J14 | 1405 | M3 | 1438 | B7 | 2425 | K20 | 2519 | H21 | 3411 | J15 | 3438 | J11 | 3464 | C12 | 3492 | C8 | 3522 | E23 | 3553 | B4 | 6439 | B10 | 7420 | B8 | 9409 | K11 | 9437 | J5 | 9466 | C24 |
| 0075 | K15 | 1406 | K8 | 1439 | C6 | 2426 | C7 | 2520 | H20 | 3412 | J15 | 3439 | J11 | 3465 | C24 | 3493 | C8 | 3523 | E22 | 3554 | D4 | 6441 | K25 | 7421 | B9 | 9410 | K9 | 9438 | E6 | 9467 | B19 |
| 0076 | B24 | 1407 | K6 | 1440 | B23 | 2433 | F7 | 2521 | G18 | 3413 | J15 | 3440 | J11 | 3467 | B22 | 3494 | C8 | 3524 | E22 | 3555 | C4 | 6442 | K25 | 7422 | J20 | 9411 | L9 | 9439 | E6 | 9468 | G19 |
| 0077 | L20 | 1408 | K5 | 1441 | F6 | 2434 | F6 | 2522 | E19 | 3414 | G12 | 3441 | M18 | 3468 | B22 | 3495 | H5 | 3525 | D21 | 3556 | B4 | 6443 | C7 | 7443 | J20 | 9412 | K8 | 9440 | G15 | 9470 | M15 |
| 0078 | G3 | 1409 | H3 | 1442 | B24 | 2441 | H7 | 2523 | F17 | 3415 | F12 | 3442 | M18 | 3469 | B22 | 3496 | H5 | 3526 | E20 | 3557 | B4 | 6470 | M18 | 7444 | J17 | 9413 | J8 | 9442 | F10 | 9471 | M14 |
| 0079 | K23 | 1410 | M25 | 1443 | J19 | 2442 | D11 | 2524 | E18 | 3416 | J9 | 3443 | G6 | 3471 | E7 | 3497 | B7 | 3527 | H24 | 3558 | E18 | 6471 | G14 | 7447 | H15 | 9414 | J8 | 9443 | D10 | 9472 | E5 |
| 0080 | L21 | 1411 | B12 | 1444 | K21 | 2444 | D10 | 2525 | G18 | 3417 | L9 | 3444 | H6 | 3472 | E7 | 3498 | C17 | 3528 | H24 | 3558 | B7 | 6481 | G10 | 7450 | J7 | 9415 | J17 | 9444 | F11 | 9473 | E5 |
| 0081 | B20 | 1412 | C17 | 1445 | B2 | 2445 | E17 | 2526 | E18 | 3418 | E15 | 3445 | H8 | 3473 | D8 | 3499 | H16 | 3529 | H22 | 3559 | C7 | 6482 | F10 | 7451 | G8 | 9416 | J17 | 9445 | F11 | 9474 | E5 |
| 0082 | F5 | 1413 | C15 | 2401 | B20 | 2451 | D7 | 2531 | F16 | 3419 | K17 | 3446 | K23 | 3474 | E8 | 3500 | D3 | 3530 | H22 | 5401 | J14 | 6536 | B2 | 7452 | G8 | 9417 | G15 | 9446 | E11 | 9475 | E5 |
| 0083 | B24 | 1414 | C11 | 2401 | 353 | 2452 | D8 | 2532 | G16 | 3420 | J17 | 3447 | K23 | 3475 | F8 | 3501 | E24 | 3531 | H21 | 5402 | M10 | 6537 | L18 | 7501 | G18 | 9418 | G17 | 9447 | C10 | 9476 | E5 |
| 0084 | H3 | 1416 | B15 | 2402 | F15 | 2453 | B6 | 2533 | G16 | 3421 | K18 | 3448 | K22 | 3476 | F8 | 3502 | E24 | 3532 | H22 | 5403 | J15 | 7400 | L13 | 7502 | E3 | 9419 | E12 | 9448 | B11 | 9477 | D5 |
| 0085 | H11 | 1417 | C13 | 2403 | F14 | 2481 | G8 | 2534 | F17 | 3422 | K4 | 3449 | H14 | 3477 | E10 | 3503 | C24 | 3533 | H21 | 5404 | H14 | 7401 | G14 | 7503 | C3 | 9421 | J16 | 9448 | C12 | 9478 | D5 |
| 0086 | K21 | 1418 | B18 | 2407 | J13 | 2505 | H24 | 2535 | G19 | 3423 | K4 | 3450 | K22 | 3478 | E10 | 3504 | C24 | 3534 | H20 | 5405 | J12 | 7402 | K17 | 7504 | E2 | 9422 | G13 | 9450 | E12 | 9479 | C5 |
| 0088 | K18 | 1421 | K5 | 2408 | H13 | 2506 | H25 | 2536 | G19 | 3425 | J9 | 3451 | J21 | 3479 | F10 | 3505 | E25 | 3535 | E19 | 6335 | F3 | 7403 | C18 | 7505 | C3 | 9423 | G13 | 9451 | E12 | 9480 | C5 |
| 0089 | M24 | 1425 | L15 | 2409 | H14 | 2507 | G23 | 2537 | G19 | 3426 | J10 | 3452 | K18 | 3480 | F10 | 3506 | G16 | 3536 | E19 | 6401 | E15 | 7404 | J18 | 7506 | E2 | 9424 | H13 | 9452 | E12 | 9481 | B5 |
| 0090 | K10 | 1430 | L20 | 2410 | L10 | 2508 | G23 | 2538 | E19 | 3427 | H12 | 3453 | K19 | 3481 | E8 | 3507 | E24 | 3537 | G18 | 6402 | H14 | 7405 | J19 | 7507 | C2 | 9425 | G13 | 9453 | E13 | 9482 | B5 |
| 0091 | L24 | 1431 | M24 | 2411 | K10 | 2509 | G22 | 2540 | C4 | 3428 | H11 | 3454 | K18 | 3482 | E8 | 3508 | G16 | 3539 | D20 | 6403 | G13 | 7406 | H18 | 7515 | E7 | 9426 | H12 | 9454 | E12 | 9483 | C2 |
| 0092 | C6 | 1431 | J18 | 2412 | M10 | 2510 | G22 | 2541 | B3 | 3429 | H11 | 3455 | H15 | 3483 | D7 | 3509 | E23 | 3540 | D21 | 6404 | K18 | 7407 | J22 | 7516 | E7 | 9427 | H12 | 9455 | E13 | 9484 | E3 |
| 0094 | B6 | 1432 | J10 | 2413 | M19 | 2511 | G21 | 3401 | B19 | 3430 | H10 | 3456 | K20 | 3484 | C7 | 3510 | D11 | 3542 | G16 | 6405 | G13 | 7408 | K22 | 9401 | K15 | 9428 | H12 | 9456 | E13 | 9485 | L19 |
| 0095 | D5 | 1433 | L25 | 2414 | M19 | 2512 | G20 | 3402 | E14 | 3431 | H10 | 3457 | K19 | 3485 | G5 | 3511 | D21 | 3543 | E17 | 6406 | F12 | 7409 | J21 | 9402 | K16 | 9429 | H12 | 9457 | B14 | 9486 | C12 |
| 0096 | M23 | 1433 | L10 | 2415 | M19 | 2513 | J24 | 3403 | E15 | 3432 | H10 | 3458 | K19 | 3486 | H6 | 3513 | E20 | 3544 | E19 | 6415 | H11 | 7410 | M17 | 9403 | L16 | 9431 | H11 | 9458 | E14 | | |
| 1400 | K13 | 1434 | L23 | 2416 | M20 | 2514 | J25 | 3406 | J16 | 3433 | J10 | 3459 | F7 | 3487 | G8 | 3517 | D22 | 3545 | D24 | 6417 | F10 | 7411 | L17 | 9404 | L12 | 9432 | H9 | 9459 | E15 | | |
| 1401 | M9 | 1434 | L22 | 2417 | K17 | 2515 | H22 | 3407 | J16 | 3434 | J10 | 3460 | G7 | 3488 | G9 | 3518 | D22 | 3546 | D24 | 6418 | F10 | 7412 | G6 | 9405 | J13 | 9433 | H9 | 9460 | E15 | | |
| 1402 | M5 | 1435 | G4 | 2422 | H10 | 2516 | H22 | 3408 | J16 | 3435 | J10 | 3461 | F7 | 3489 | G9 | 3519 | G24 | 3550 | C4 | 6420 | M22 | 7414 | D11 | 9406 | J14 | 9434 | H9 | 9462 | E16 | | |
| 1403 | M7 | 1436 | G4 | 2423 | K23 | 2517 | H21 | 3409 | J16 | 3436 | J10 | 3462 | F7 | 3490 | G11 | 3520 | G24 | 3551 | C4 | 6437 | L23 | 7416 | C23 | 9407 | K12 | 9435 | H9 | 9464 | E16 | | |

## FEATURE BOARD



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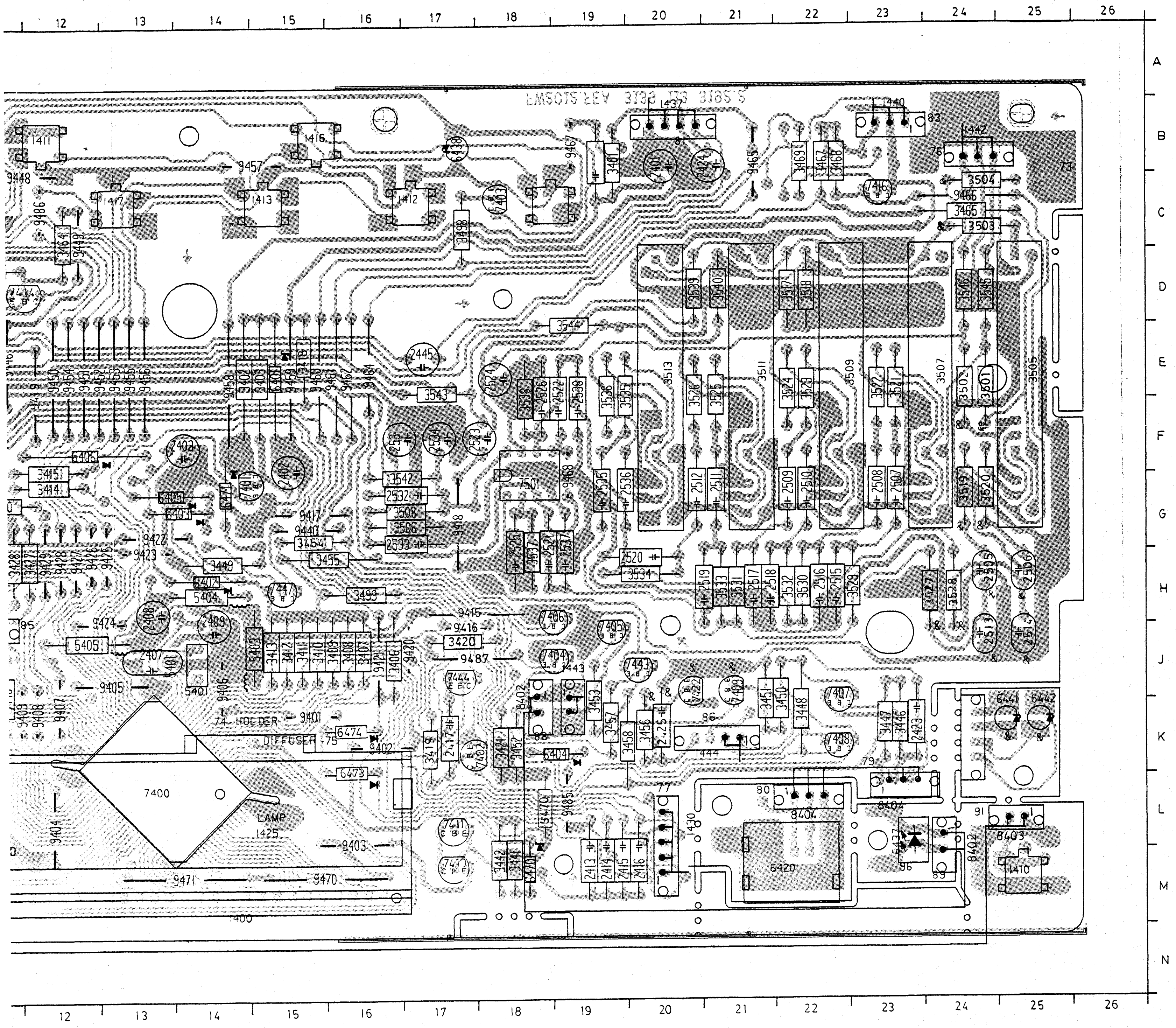
| H10 | 3463 | E11 | 3491 | C8 | 3521 | E23 | 3552 | B4 | 6438 | B17 | 7419 | G5 | 9408 | K12 | 9436 | J8 | 9465 | B21 |
| J11 | 3464 | C12 | 3492 | C8 | 3522 | E23 | 3553 | B4 | 6439 | B10 | 7420 | B8 | 9409 | K11 | 9437 | J5 | 9466 | C24 |
| J11 | 3465 | C24 | 3493 | C8 | 3523 | E22 | 3554 | D4 | 6441 | K25 | 7421 | B9 | 9410 | K9 | 9438 | E6 | 9467 | B19 |
| J11 | 3467 | B22 | 3494 | C8 | 3524 | E22 | 3555 | C4 | 6442 | K25 | 7422 | J20 | 9411 | L9 | 9439 | E6 | 9468 | G19 |
| M18 | 3468 | B22 | 3495 | H5 | 3525 | D21 | 3556 | B4 | 6443 | C7 | 7443 | J20 | 9412 | K8 | 9440 | G15 | 9470 | M15 |
| M18 | 3469 | B22 | 3496 | H5 | 3526 | E20 | 3557 | B4 | 6470 | M18 | 7444 | J17 | 9413 | J8 | 9442 | F10 | 9471 | M14 |
| G6 | 3471 | E7 | 3497 | B7 | 3527 | H24 | 3558 | E18 | 6471 | G14 | 7447 | H15 | 9414 | J8 | 9443 | D10 | 9472 | E5 |
| H6 | 3472 | E7 | 3498 | C17 | 3528 | H24 | 3558 | B7 | 6481 | G10 | 7450 | J7 | 9415 | J17 | 9444 | F11 | 9473 | E5 |
| H8 | 3473 | D8 | 3499 | H16 | 3529 | H22 | 3559 | C7 | 6482 | F10 | 7451 | G8 | 9416 | J17 | 9445 | F11 | 9474 | E5 |
| K23 | 3474 | E8 | 3500 | D3 | 3530 | H22 | 5401 | J14 | 6536 | B2 | 7452 | G8 | 9417 | G15 | 9446 | E11 | 9475 | E5 |
| K23 | 3475 | F8 | 3501 | E24 | 3531 | H21 | 5402 | M10 | 6537 | L18 | 7501 | G18 | 9418 | G17 | 9447 | C10 | 9476 | E5 |
| K22 | 3476 | F8 | 3502 | E24 | 3532 | H22 | 5403 | J15 | 7400 | L13 | 7502 | E3 | 9419 | E12 | 9448 | B11 | 9477 | D5 |
| H14 | 3477 | E10 | 3503 | C24 | 3533 | H21 | 5404 | H14 | 7401 | G14 | 7503 | C3 | 9421 | J16 | 9448 | C12 | 9478 | D5 |
| K22 | 3478 | E10 | 3504 | C24 | 3534 | H20 | 5405 | J12 | 7402 | K17 | 7504 | E2 | 9422 | G13 | 9450 | E12 | 9479 | C5 |
| J21 | 3479 | F10 | 3505 | E25 | 3535 | E19 | 6335 | F3 | 7403 | C18 | 7505 | C3 | 9423 | G13 | 9451 | E12 | 9480 | C5 |
| K18 | 3480 | F10 | 3506 | G16 | 3536 | E19 | 6401 | E15 | 7404 | J18 | 7506 | E2 | 9424 | H13 | 9452 | E12 | 9481 | B5 |
| K19 | 3481 | E8 | 3507 | E24 | 3537 | G18 | 6402 | H14 | 7405 | J19 | 7507 | C2 | 9425 | G13 | 9453 | E13 | 9482 | B5 |
| K18 | 3482 | E8 | 3508 | G16 | 3539 | D20 | 6403 | G13 | 7406 | H18 | 7515 | E7 | 9426 | H12 | 9454 | E12 | 9483 | C2 |
| H15 | 3483 | D7 | 3509 | E23 | 3540 | D21 | 6404 | K18 | 7407 | J22 | 7516 | E7 | 9427 | H12 | 9455 | E13 | 9484 | E3 |
| K20 | 3484 | C7 | 3510 | D11 | 3542 | G16 | 6405 | G13 | 7408 | K22 | 9401 | K15 | 9428 | H12 | 9456 | E13 | 9485 | L19 |
| K19 | 3485 | G5 | 3511 | D21 | 3543 | E17 | 6406 | F12 | 7409 | J21 | 9402 | K16 | 9429 | H12 | 9457 | B14 | 9486 | C12 |
| K19 | 3486 | H6 | 3513 | E20 | 3544 | E19 | 6415 | H11 | 7410 | M17 | 9403 | L16 | 9431 | H11 | 9458 | E14 | | |
| F7 | 3487 | G8 | 3517 | D22 | 3545 | D24 | 6417 | F10 | 7411 | L17 | 9404 | L12 | 9432 | H9 | 9459 | E15 | | |
| G7 | 3488 | G9 | 3518 | D22 | 3546 | D24 | 6418 | F10 | 7412 | G6 | 9405 | J13 | 9433 | H9 | 9460 | E15 | | |
| F7 | 3489 | G9 | 3519 | G24 | 3550 | C4 | 6420 | M22 | 7414 | D11 | 9406 | J14 | 9434 | H9 | 9462 | E16 | | |
| F7 | 3490 | G11 | 3520 | G24 | 3551 | C4 | 6437 | L23 | 7416 | C23 | 9407 | K12 | 9435 | H9 | 9464 | E16 | | |



+5 : 5V

V+ : 12.5V

VA : 12.7V

Vm : 10.0V

7501

1 : 6.0V    5 : 6.0V
2 : 6.0V    6 : 6.0V
3 : 6.0V    7 : 6.0V
4 : 0V    8 : 12.5V

| 7401 | 7403 | 7404 | 7405 | 7406 |
|---|---|---|---|---|
| e : 5.7V | e : 0V | e : 0V | e : 0V | e : 0V |
| b : 6.3V | b : 0.25V | b : 0.8V | b : 0.23V | b : -0.4V |
| c : 20.0V | c : 2.2V | c : 2.2V | c : 2.3V | c : 4.2V |

| 7407 | 7408 | 7410 | 7411 | 7412 |
|---|---|---|---|---|
| e : 5.0V | e : 0.74V | e : 9.0V | e : 9.0V | e : 10.0V |
| b : 4.9V | b : 0.1V | b : 8.3V | b : 8.4V | b : 9.2V |
| c : 0V | c : 0V | c : 8.9V | c : 8.3V | c : 9.8V |

| 7414 | 7419 | 7420 | 7421 | 7443 |
|---|---|---|---|---|
| e : 0V | e : 12.7V | e : 0V | e : 0V | e : 0V |
| b : 0.6V | b : 12.0V | b : 0.6V | b : 0V | b : 0.8V |
| e : 1.0V | c : 12.5V | c : 0V | c : 2.2V | c : 2.2V |

| 7444 | 7447 | 7450 | 7452 |
|---|---|---|---|
| e : 0V | e : 5.0V | e : 0V | e : 0V |
| b : 0.6V | b : 4.4V | b : 0.7V | b : 0.7V |
| c : 0.22V | c : 0V | c : 0.4V | c : 0.87V |

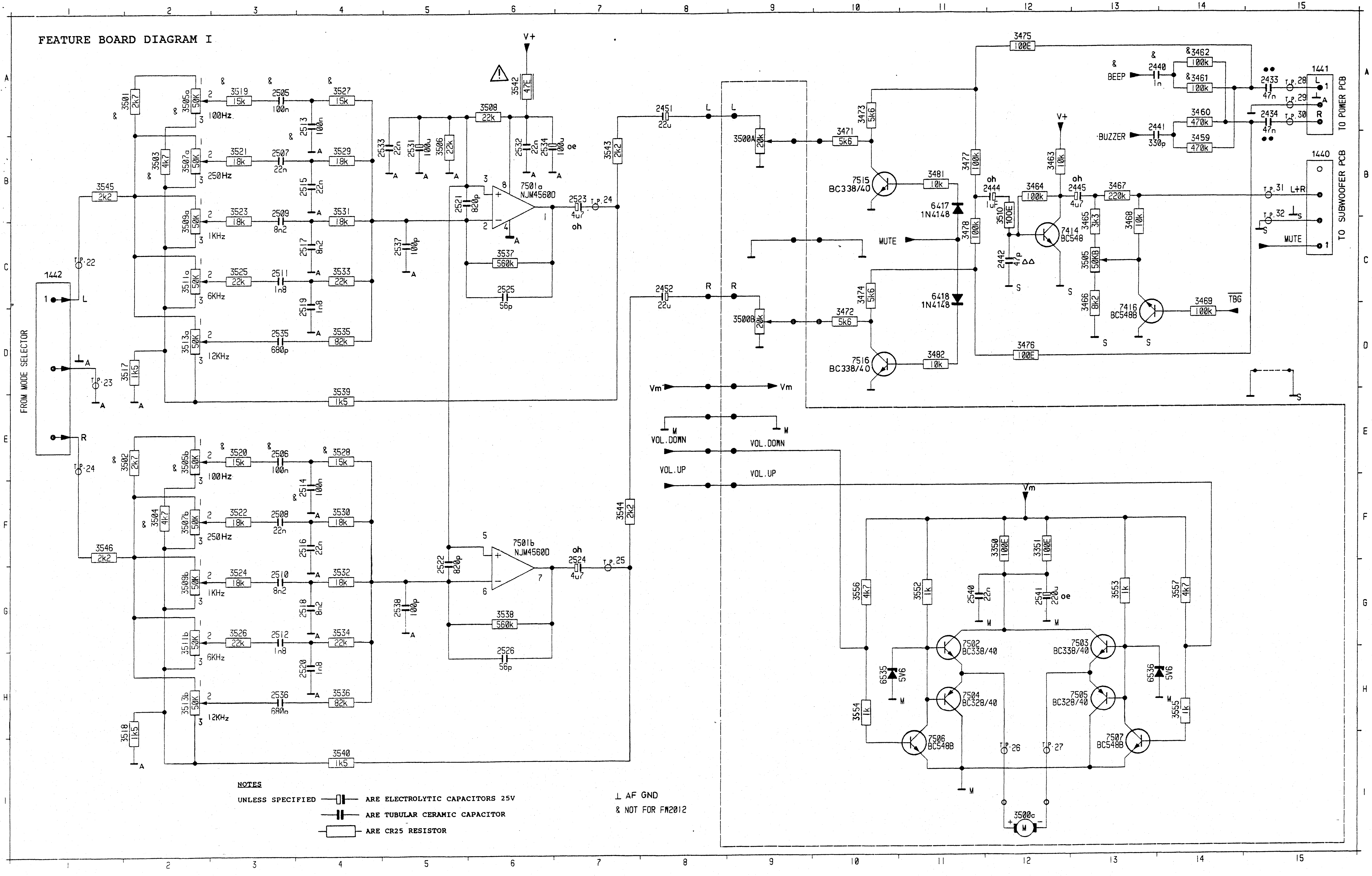
| 7502 | 7503 | 7504 |
|---|---|---|
| e : 0.7Vup<br>: 5.1Vdn | e : 5.1Vup<br>: 0.7Vdn | e : 0.7Vup<br>: 5.1Vdn |
| b : 0.36Vup<br>: 5.7Vdn | b : 5.7Vup<br>: 0.36Vdn | b : 0.36Vup<br>: 5.7Vdn |
| c : 8.5V | c : 8.5V | c : 0V |

| 7505 | 7506 | 7507 |
|---|---|---|
| e : 5.1Vup<br>: 0.7Vdn | e : 0V | e : 0V |
| b : 5.7Vup<br>: 0.36Vdn | b : 0.7Vup<br>: 0.2Vdn | b : 0.2Vup<br>: 0.7Vdn |
| c : 0V | c : 0.36Vup<br>: 5.7Vdn | c : 0.36Vup<br>: 5.7Vdn |

| | |
|---|---|
| ....V | measured in CD mode, power on position |
| ....Vup | measured in CD mode, volume up position |
| ....Vdn | measured in CD mode, volume down position |
| ....Val | measured in CD mode, alarm on position |
| ....V | measured in CD mode, subwoofer on position |
| ....V | measured in CD mode, dolby on position |

| | |
|---|---|
| 1440 | B15 |
| 1441 | A15 |
| 1442 | C 1 |
| 2433 | A15 |
| 2434 | A15 |
| 2440 | A13 |
| 2441 | A13 |
| 2442 | C12 |
| 2444 | B12 |
| 2445 | B13 |
| 2451 | A 8 |
| 2452 | C 8 |
| 2505 | A 3 |
| 2506 | E 3 |
| 2507 | B 3 |
| 2508 | F 3 |
| 2509 | B 3 |
| 2510 | G 3 |
| 2511 | C 3 |
| 2512 | G 3 |
| 2513 | A 4 |
| 2514 | F 4 |
| 2515 | B 4 |
| 2516 | F 4 |
| 2517 | C 4 |
| 2518 | G 4 |
| 2519 | C 4 |
| 2520 | H 4 |
| 2521 | B 5 |
| 2522 | F 5 |
| 2523 | B 7 |
| 2524 | F 7 |
| 2525 | C 6 |
| 2526 | H 6 |
| 2531 | B 5 |
| 2532 | B 6 |
| 2533 | B 5 |
| 2534 | B 6 |
| 2535 | D 3 |
| 2536 | H 3 |
| 2537 | C 5 |
| 2538 | G 5 |
| 2540 | G11 |
| 2541 | G12 |
| 3350 | F12 |
| 3351 | F12 |
| 3459 | B14 |
| 3460 | A14 |
| 3461 | A14 |
| 3462 | A14 |
| 3463 | B12 |
| 3464 | B12 |
| 3465 | C13 |
| 3466 | C13 |
| 3467 | B13 |
| 3468 | C13 |
| 3469 | D14 |
| 3471 | B10 |
| 3472 | D10 |
| 3473 | A10 |
| 3474 | C10 |
| 3475 | A12 |
| 3476 | D12 |
| 3477 | B11 |
| 3478 | C11 |
| 3481 | B11 |
| 3482 | D11 |
| 3500A | B 9 |
| 3500B | D 9 |
| 3500c | I12 |
| 3501 | A 2 |
| 3502 | E 2 |
| 3503 | B 2 |
| 3504 | F 2 |
| 3505 | C13 |
| 3505a | A 2 |
| 3505b | E 2 |
| 3506 | B 5 |
| 3507a | B 2 |
| 3507b | F 2 |
| 3508 | A 6 |
| 3509a | B 2 |
| 3509b | G 2 |
| 3511a | C 2 |
| 3511b | G 2 |
| 3513a | D 2 |
| 3513b | H 2 |
| 3517 | D 2 |
| 3518 | H 2 |
| 3519 | A 3 |
| 3520 | E 3 |
| 3521 | B 3 |
| 3522 | F 3 |
| 3523 | B 3 |
| 3524 | G 3 |
| 3525 | C 3 |
| 3526 | G 3 |
| 3527 | A 4 |
| 3528 | E 4 |
| 3529 | B 4 |
| 3530 | F 4 |
| 3531 | B 4 |
| 3532 | G 4 |
| 3533 | C 4 |
| 3534 | G 4 |
| 3535 | D 4 |
| 3536 | H 4 |
| 3537 | C 6 |
| 3538 | G 6 |
| 3539 | E 4 |
| 3540 | I 4 |
| 3542 | A 6 |
| 3543 | B 7 |
| 3544 | F 7 |
| 3545 | B 1 |
| 3546 | F 1 |
| 3552 | G11 |
| 3553 | G13 |
| 3554 | H10 |
| 3555 | H14 |
| 3556 | G10 |
| 3557 | G14 |
| 6535 | H10 |
| 6536 | H13 |
| 7414 | C12 |
| 7416 | D13 |
| 7501a | B 6 |
| 7501b | F 6 |
| 7502 | G11 |
| 7503 | G13 |
| 7504 | H11 |
| 7505 | H13 |
| 7506 | I11 |
| 7507 | I13 |
| 7515 | B10 |
| 7516 | D10 |
| 3510 | B12 |
| 6417 | B11 |
| 6418 | C11 |

# FEATURE BOARD DIAGRAM I



1442
FROM MODE SELECTOR
L
R
T.P.22
T.P.23
T.P.24
3545 2k2
3546 2k2
3501 2k7
3502 2k7
3503 4k7
3504 4k7
3517 1k5
3518 1k5
3505a 50K
3505b 50K
3507a 50K
3507b 50K
3509a 50K
3509b 50K
3511a 50K
3511b 50K
3513a 50K
3513b 50K
100Hz
250Hz
1KHz
6KHz
12KHz
3519 15k
3520 15k
3521 18k
3522 18k
3523 18k
3524 18k
3525 22k
3526 22k
2505 100n
2506 100n
2507 22n
2508 22n
2509 8n2
2510 8n2
2511 1n8
2512 1n8
2535 680p
2536 680p
2513 100n
2514 100n
2515 22n
2516 22n
2517 8n2
2518 8n2
2519 1n8
2520 1n8
3527 15k
3528 15k
3529 18k
3530 18k
3531 18k
3532 18k
3533 22k
3534 22k
3535 82k
3536 82k
3539 1k5
3540 1k5
2537 100p
2538 100p
2533 22n
2531 100u
3506 22k
3508 22k
3542 47E
V+
2532 22n
2534 100u
oe
2521 820p
2522 820p
7501a NJM4560D
7501b NJM4560D
3537 560k
3538 560k
2525 56p
2526 56p
2523 4u7
2524 4u7
oh
T.P.24
T.P.25
3543 2k2
3544 2k2
2451 22u
2452 22u
L
R
3500A 20k
3500B 20k
3471 5k6
3472 5k6
3473 5k6
3474 5k6
7515 BC338/40
7516 BC338/40
3481 10k
3482 10k
6417 1N4148
6418 1N4148
MUTE
3475 100E
3476 100E
3477 100k
3478 100k
2444 1u
3510 100E
2442 1p ΔΔ
3464 100k
3463 10k
2445 4u7
7414 BC548
3465 3k3
3505 50KB
3466 8k2
3467 220k
3468 10k
7416 BC548B
3469 100k
TBG
S
BEEP
2440 1n
BUZZER
2441 330p
3462 100k
3461 100k
3460 470k
3459 470k
2433 47n
2434 47n
T.P.28
T.P.29
T.P.30
T.P.31
T.P.32
1441
TO POWER PCB
1440
TO SUBWOOFER PCB
L+R
MUTE
Vm
M
VOL.DOWN
VOL.UP
3350 100E
3351 100E
2540 22n
2541 220u
3556 4k7
3557 4k7
3552 1k
3553 1k
3554 1k
3555 1k
6535 5V6
6536 5V6
7502 BC338/40
7503 BC338/40
7504 BC328/40
7505 BC328/40
7506 BC548B
7507 BC548B
T.P.26
T.P.27
3500c
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

NOTES

UNLESS SPECIFIED ARE ELECTROLYTIC CAPACITORS 25V

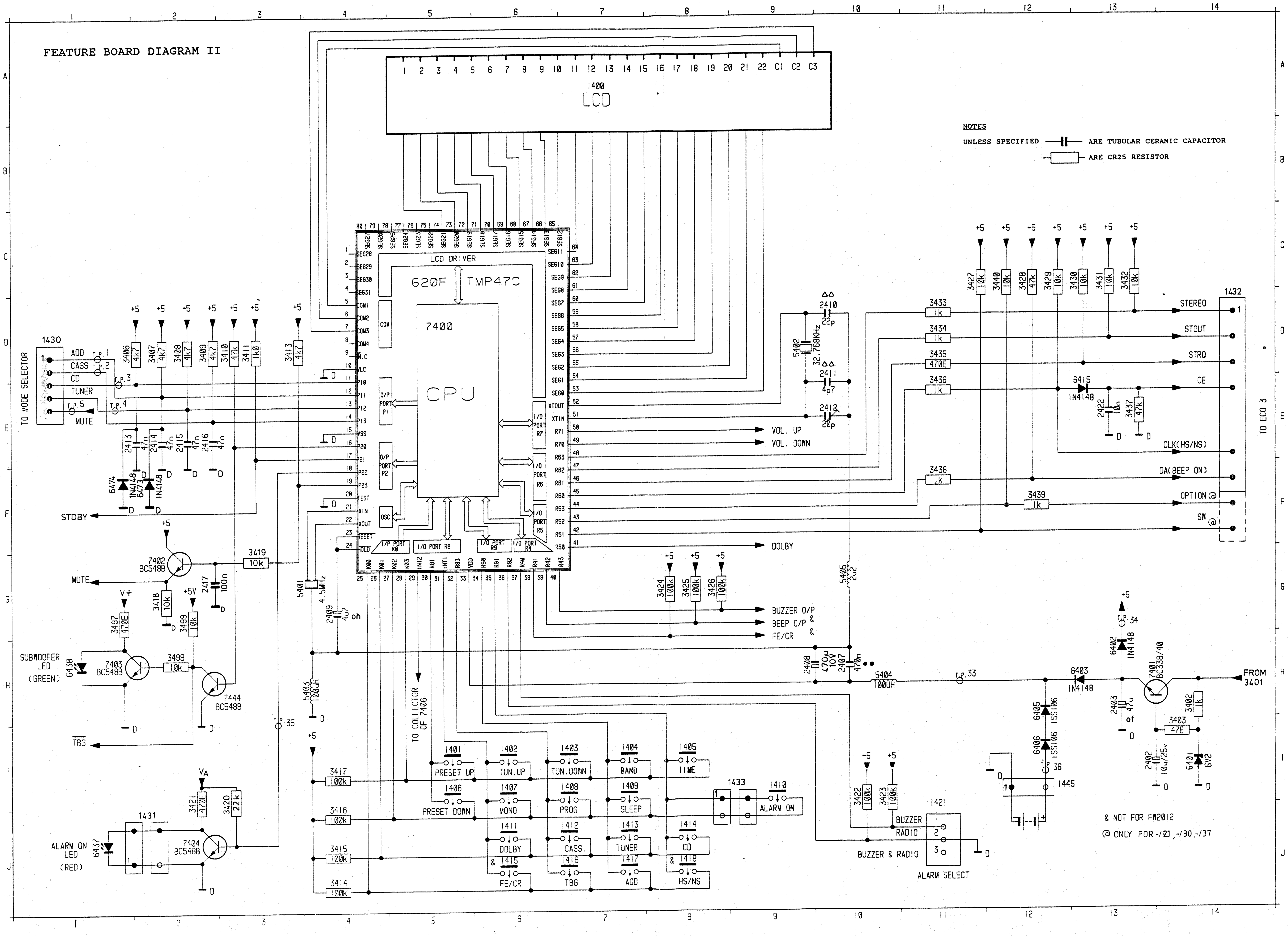
ARE TUBULAR CERAMIC CAPACITOR

ARE CR25 RESISTOR

⊥ AF GND

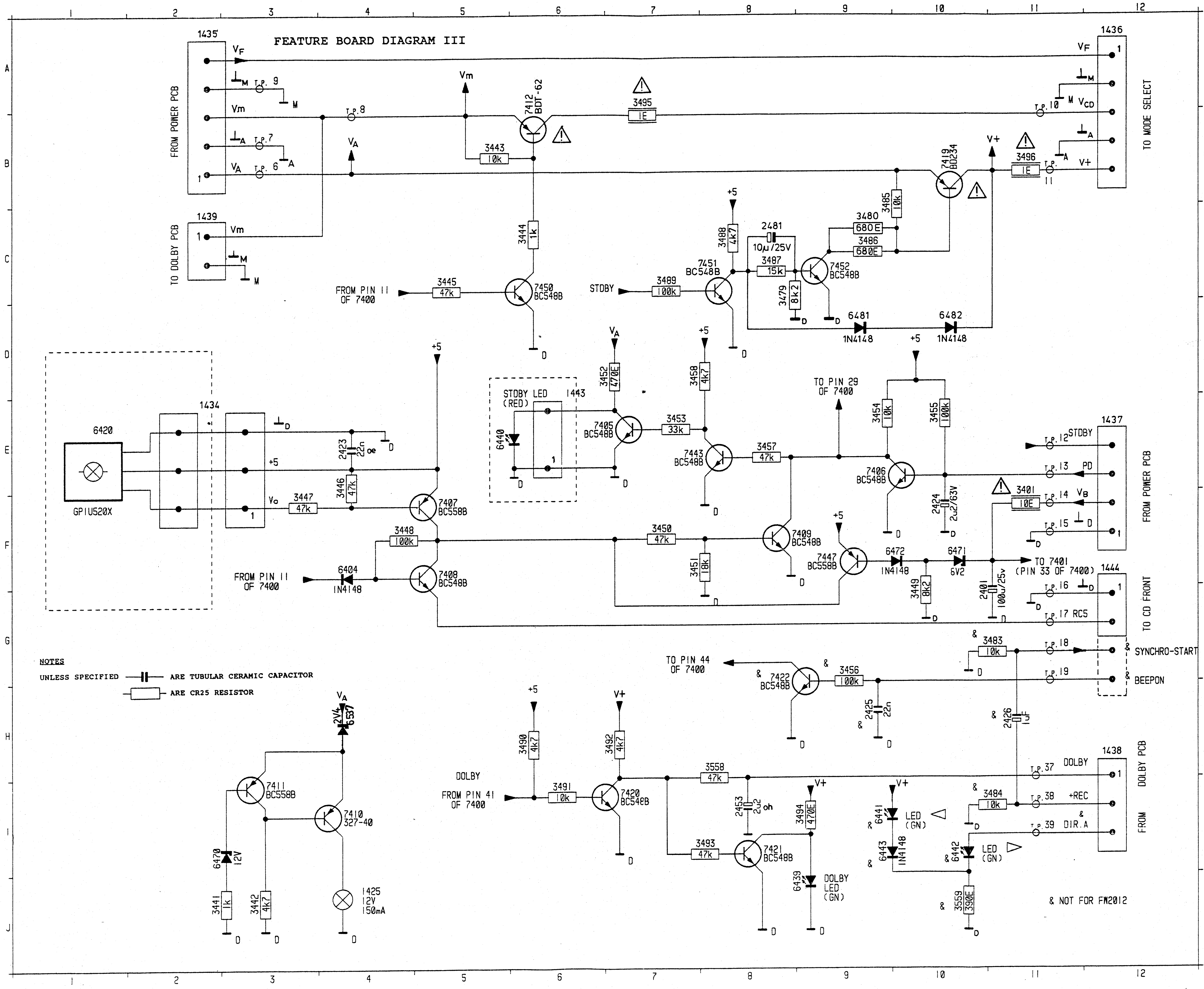
& NOT FOR FM2012

# FEATURE BOARD DIAGRAM II


NOTES
UNLESS SPECIFIED —||— ARE TUBULAR CERAMIC CAPACITOR
—▭— ARE CR25 RESISTOR
1400 LCD
7400 TMP47C 620F
LCD DRIVER
CPU
TO MODE SELECTOR
1430
ADD
CASS
CD
TUNER
MUTE
STDBY
MUTE
SUBWOOFER LED (GREEN)
ALARM ON LED (RED)
TBG
1431
7402 BC548B
7403 BC548B
7404 BC548B
7444 BC548B
5402 32.768KHz
5401 4.5MHz
VOL. UP
VOL. DOWN
DOLBY
BUZZER O/P
BEEP O/P
FE/CR
TO COLLECTOR OF 7406
STEREO
STOUT
STRO
CE
CLK(HS/NS)
DA(BEEP ON)
OPTION @
SW @
1432
TO ECO 3
FROM 3401
7401 BC338/40
1401 PRESET UP
1402 TUN.UP
1403 TUN.DOWN
1404 BAND
1405 TIME
1406 PRESET DOWN
1407 MONO
1408 PROG
1409 SLEEP
1410 ALARM ON
1411 DOLBY
1412 CASS.
1413 TUNER
1414 CD
1415 FE/CR
1416 TBG
1417 ADD
1418 HS/NS
1433
1421 BUZZER RADIO
BUZZER & RADIO
ALARM SELECT
1445
& NOT FOR FW2012
@ ONLY FOR -/21,-/30,-/37

| | | |
|---|---|---|
| 1401 | I | 5 |
| 1402 | I | 6 |
| 1403 | I | 7 |
| 1404 | I | 7 |
| 1405 | I | 8 |
| 1406 | I | 5 |
| 1407 | I | 6 |
| 1408 | I | 7 |
| 1409 | I | 7 |
| 1410 | I | 9 |
| 1411 | J | 6 |
| 1412 | J | 7 |
| 1413 | J | 7 |
| 1414 | J | 8 |
| 1415 | J | 6 |
| 1416 | J | 7 |
| 1417 | J | 7 |
| 1418 | J | 8 |
| 1421 | J | 11 |
| 1445 | I | 12 |
| 2402 | I | 13 |
| 2403 | H | 13 |
| 2407 | H | 10 |
| 2408 | H | 9 |
| 2409 | G | 4 |
| 2410 | D | 10 |
| 2411 | E | 10 |
| 2412 | E | 10 |
| 2413 | E | 1 |
| 2414 | E | 2 |
| 2415 | E | 2 |
| 2416 | E | 2 |
| 2422 | E | 13 |
| 3402 | H | 14 |
| 3403 | I | 14 |
| 3406 | D | 1 |
| 3407 | D | 2 |
| 3408 | D | 2 |
| 3409 | D | 2 |
| 3410 | D | 3 |
| 3411 | D | 3 |
| 3413 | D | 3 |
| 3414 | J | 4 |
| 3415 | J | 4 |
| 3416 | J | 4 |
| 3417 | I | 4 |
| 3419 | G | 4 |
| 3420 | I | 3 |
| 3421 | I | 2 |
| 3422 | I | 10 |
| 3423 | I | 10 |
| 3424 | G | 8 |
| 3425 | G | 8 |
| 3426 | G | 8 |
| 3427 | C | 11 |
| 3428 | C | 12 |
| 3429 | C | 12 |
| 3430 | C | 13 |
| 3431 | C | 13 |
| 3432 | C | 13 |
| 3433 | D | 11 |
| 3434 | D | 11 |
| 3435 | D | 11 |
| 3436 | E | 11 |
| 3437 | E | 13 |
| 3438 | F | 11 |
| 3439 | F | 12 |
| 3440 | C | 12 |
| 3497 | G | 1 |
| 3498 | H | 2 |
| 3499 | G | 2 |
| 5401 | G | 3 |
| 5402 | D | 9 |
| 5403 | H | 4 |
| 5404 | H | 10 |
| 5405 | G | 10 |
| 6401 | I | 14 |
| 6402 | H | 13 |
| 6403 | H | 13 |
| 6405 | H | 12 |
| 6406 | I | 12 |
| 6415 | E | 13 |
| 6437 | J | 1 |
| 6438 | H | 1 |
| 7400 | D | 5 |
| 7401 | H | 13 |
| 7402 | G | 2 |
| 7403 | H | 1 |
| 7404 | J | 2 |
| 7444 | H | 3 |
| 1430 | D | 1 |
| 1431 | J | 2 |
| 1432 | D | 13 |
| 1433 | I | 9 |
| 2417 | G | 2 |
| 3418 | G | 2 |
| 6473 | F | 2 |
| 6474 | F | 1 |

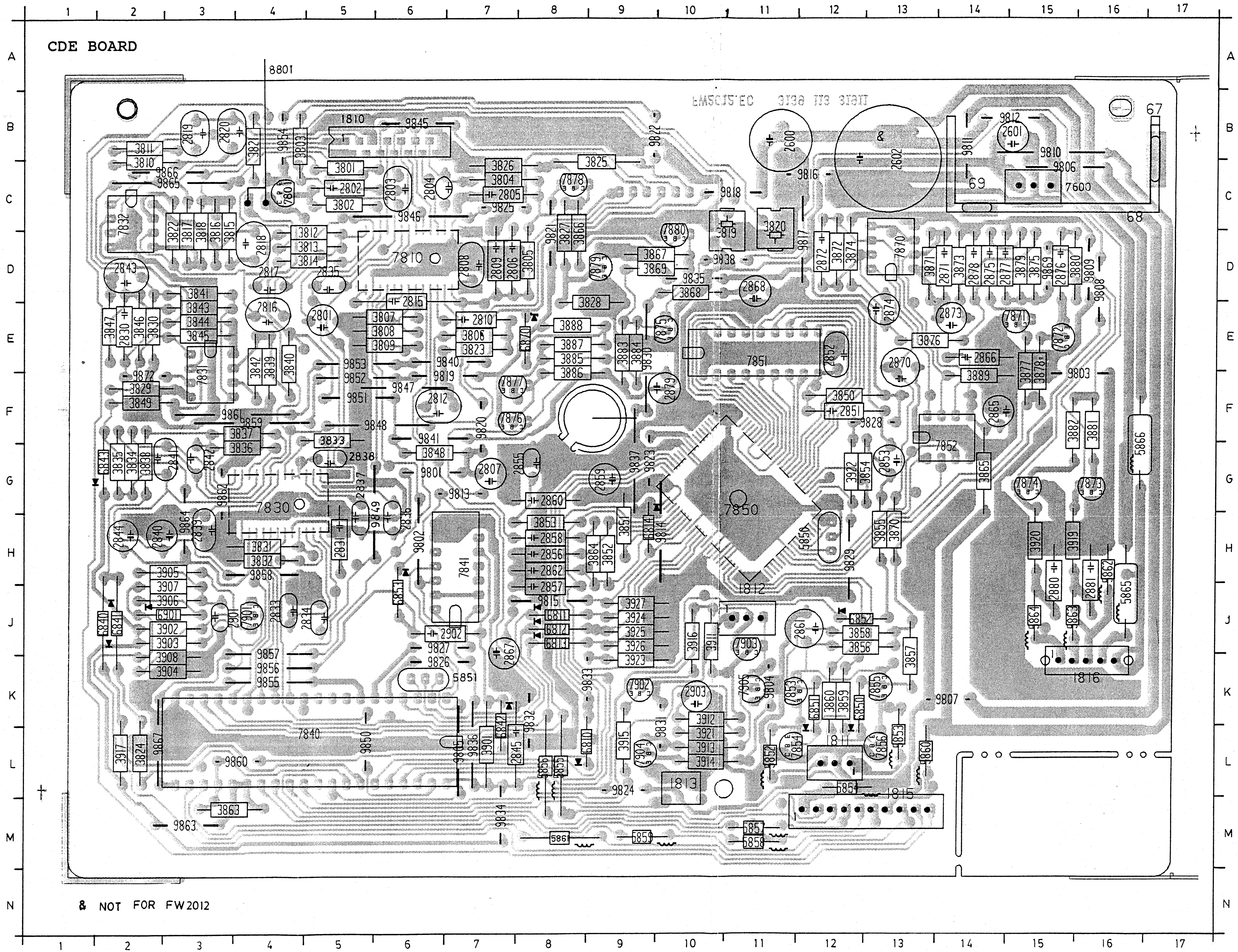
# FEATURE BOARD DIAGRAM III



1435
FROM POWER PCB
VF
T.P. 9
M
Vm
T.P. 8
A
T.P. 7
VA
T.P. 6
1439
TO DOLBY PCB
7412 BDT-62
3443 10k
3495 1E
3444 1k
3445 47k
FROM PIN 11 OF 7400
7450 BC548B
1436
TO MODE SELECT
T.P. 10
VCD
V+
3496 1E
T.P. 11
7419 BD234
3485 10k
3480 680E
3486 680E
2481 10μ/25V
3487 15k
3488 4k7
+5
7451 BC548B
7452 BC548B
3479 8k2
STDBY
3489 100k
6481 1N4148
6482 1N4148
D
6420
GP1U520X
1434
2423 22n
+5
Vo
3447 47k
3446 47k
7407 BC558B
3448 100k
6404 1N4148
7408 BC548B
STDBY LED (RED)
1443
6440
3452 470E
7405 BC548B
3453 33k
3458 4k7
7443 BC548B
3457 47k
TO PIN 29 OF 7400
3454 10k
3455 100k
7406 BC548B
2424 2u2/63V
1437
T.P. 12 STDBY
T.P. 13 PD
T.P. 14 VB
3401 10E
T.P. 15
FROM POWER PCB
3450 47k
3451 18k
7409 BC548B
7447 BC558B
6472 1N4148
6471 6V2
3449 8k2
2401 100u/25v
TO 7401 (PIN 33 OF 7400)
1444
T.P. 16
T.P. 17 RC5
TO CD FRONT
3483 10k
T.P. 18
SYNCHRO-START
T.P. 19
BEEPON
TO PIN 44 OF 7400
7422 BC548B
3456 100k
2425 22n
2426 1uF
NOTES
UNLESS SPECIFIED ARE TUBULAR CERAMIC CAPACITOR
ARE CR25 RESISTOR
6537 2V4
7411 BC558B
7410 327-40
6470 12V
3441 1k
3442 4k7
1425 12V 150mA
3490 4k7
3492 4k7
DOLBY
FROM PIN 41 OF 7400
3491 10k
7420 BC548B
3558 47k
2453 2u2
3493 47k
7421 BC548B
3494 470E
6439 DOLBY LED (GN)
6441 LED (GN)
6443 1N4148
6442 LED (GN)
3484 10k
3559 390E
1438
T.P. 37 DOLBY
T.P. 38 +REC
T.P. 39 DIR.A
FROM DOLBY PCB
& NOT FOR FW2012

| | |
|---|---|
| 1425 | J 6 |
| 1434 | E 2 |
| 1435 | A 2 |
| 1436 | A12 |
| 1437 | E12 |
| 1438 | H12 |
| 1443 | D 6 |
| 1444 | F12 |
| 2401 | G10 |
| 2423 | E 4 |
| 2424 | F10 |
| 2425 | H 9 |
| 2426 | H11 |
| 2453 | I 8 |
| 3401 | F11 |
| 3441 | J 2 |
| 3442 | J 3 |
| 3443 | B 5 |
| 3444 | C 6 |
| 3445 | C 5 |
| 3446 | E 4 |
| 3447 | F 3 |
| 3448 | F 4 |
| 3449 | G10 |
| 3450 | F 7 |
| 3451 | F 7 |
| 3452 | D 7 |
| 3453 | E 7 |
| 3454 | E 9 |
| 3455 | E10 |
| 3456 | G 9 |
| 3457 | E 8 |
| 3458 | D 7 |
| 3483 | G11 |
| 3484 | I11 |
| 3485 | B 9 |
| 3486 | C 9 |
| 3487 | C 8 |
| 3488 | C 8 |
| 3489 | C 7 |
| 3490 | H 6 |
| 3491 | I 6 |
| 3492 | H 7 |
| 3493 | I 8 |
| 3494 | I 9 |
| 3495 | A 7 |
| 3496 | B11 |
| 3558 | H 8 |
| 3559 | J10 |
| 6404 | F 4 |
| 6420 | E 1 |
| 6439 | J 9 |
| 6440 | E 5 |
| 6441 | I 9 |
| 6442 | I10 |
| 6443 | I 9 |
| 6470 | I 2 |
| 6471 | F10 |
| 6472 | F10 |
| **6537** | **H 4** |
| 7405 | E 7 |
| 7406 | E 9 |
| 7407 | F 5 |
| 7408 | F 5 |
| 7409 | F 8 |
| 7410 | I 4 |
| 7411 | I 3 |
| 7412 | B 6 |
| 7419 | B10 |
| 7420 | I 7 |
| 7421 | I 8 |
| 7422 | G 8 |
| 7443 | E 8 |
| 7447 | F 9 |
| 7450 | C 6 |
| 7451 | C 8 |
| 7452 | C 9 |
| 2481 | C 8 |
| 3479 | C 8 |
| 3480 | C 9 |
| 6481 | D 9 |
| 6482 | D10 |

# CDE BOARD



& NOT FOR FW2012

| | | | | | |
|---|---|---|---|---|---|
| 0067 | B17 | 3831 | H4 | 6841 | J2 |
| 0068 | C16 | 3832 | H4 | 6842 | L7 |
| 0069 | C14 | 3833 | F5 | 6843 | G2 |
| 1810 | B5 | 3834 | G2 | 6850 | K12 |
| 1811 | L12 | 3835 | G2 | 6850 | K12 |
| 1812 | J11 | 3836 | G4 | 6852 | J12 |
| 1813 | L10 | 3837 | F4 | 6853 | J6 |
| 1815 | L13 | 3838 | G2 | 7600 | C16 |
| 1816 | K16 | 3839 | E4 | 7801 | C4 |
| 2600 | B11 | 3840 | E4 | 7810 | D6 |
| 2601 | B15 | 3841 | D3 | 7830 | G4 |
| 2602 | C13 | 3842 | E4 | 7831 | F3 |
| 2801 | E5 | 3843 | E3 | 7832 | C2 |
| 2802 | C5 | 3844 | E3 | 7840 | L4 |
| 2803 | C6 | 3845 | E3 | 7841 | H7 |
| 2804 | C6 | 3846 | E2 | 7850 | G11 |
| 2805 | C7 | 3848 | G6 | 7851 | L11 |
| 2806 | D7 | 3849 | F2 | 7851 | E11 |
| 2807 | G7 | 3850 | F12 | 7852 | G14 |
| 2808 | D7 | 3851 | H9 | 7853 | K11 |
| 2809 | D7 | 3852 | H9 | 7855 | K13 |
| 2810 | E7 | 3853 | H8 | 7856 | L13 |
| 2812 | F6 | 3853 | G13 | 7870 | D13 |
| 2815 | E6 | 3854 | G13 | 7871 | E15 |
| 2816 | E4 | 3855 | H13 | 7872 | E15 |
| 2817 | D4 | 3856 | J12 | 7873 | G16 |
| 2818 | D4 | 3857 | K13 | 7874 | G15 |
| 2819 | B3 | 3858 | J12 | 7875 | E10 |
| 2820 | B3 | 3859 | K12 | 7876 | F7 |
| 2830 | E2 | 3860 | K12 | 7877 | F7 |
| 2831 | H5 | 3863 | M3 | 7878 | C8 |
| 2833 | J4 | 3864 | H9 | 7879 | D9 |
| 2834 | J4 | 3865 | G14 | 7880 | D10 |
| 2835 | D5 | 3866 | D8 | 7901 | J4 |
| 2836 | H6 | 3867 | D9 | 7902 | K9 |
| 2837 | G5 | 3868 | D10 | 7903 | J11 |
| 2838 | G5 | 3869 | D9 | 7904 | L9 |
| 2839 | H3 | 3870 | H13 | 7905 | K11 |
| 2840 | H2 | 3871 | D13 | 8801 | A4 |
| 2841 | G3 | 3872 | D12 | 9601 | J3 |
| 2842 | G3 | 3873 | D14 | 9801 | G6 |
| 2843 | D2 | 3874 | D12 | 9802 | H6 |
| 2844 | H2 | 3875 | D15 | 9803 | F16 |
| 2845 | L7 | 3876 | E13 | 9804 | K11 |
| 2851 | F12 | 3877 | F15 | 9805 | L7 |
| 2852 | E12 | 3878 | F15 | 9806 | C15 |
| 2855 | G7 | 3879 | D15 | 9807 | K14 |
| 2856 | H8 | 3880 | D16 | 9808 | D16 |
| 2857 | J8 | 3881 | F16 | 9809 | D16 |
| 2858 | H8 | 3882 | F16 | 9810 | B15 |
| 2859 | G9 | 3883 | E9 | 9811 | B14 |
| 2860 | G8 | 3884 | E9 | 9812 | B15 |
| 2861 | J12 | 3885 | E8 | 9813 | G7 |
| 2862 | H8 | 3886 | F8 | 9814 | H10 |
| 2865 | F14 | 3887 | E8 | 9815 | J8 |
| 2866 | E14 | 3888 | E8 | 9816 | C12 |
| 2867 | J7 | 3889 | F14 | 9817 | D12 |
| 2868 | D11 | 3901 | L7 | 9818 | C11 |
| 2870 | E13 | 3902 | J3 | 9819 | F6 |
| 2871 | D14 | 3903 | J3 | 9820 | F7 |
| 2872 | D12 | 3904 | K3 | 9821 | D8 |
| 2873 | E14 | 3905 | H3 | 9822 | B9 |
| 2874 | E13 | 3906 | J3 | 9823 | G9 |
| 2875 | D14 | 3907 | H3 | 9824 | L9 |
| 2876 | D15 | 3908 | K3 | 9825 | C7 |
| 2877 | D14 | 3911 | J10 | 9826 | K6 |
| 2878 | D14 | 3912 | K10 | 9827 | J6 |
| 2879 | F10 | 3913 | L10 | 9828 | F13 |
| 2880 | J15 | 3914 | L10 | 9829 | H12 |
| 2881 | J16 | 3915 | L9 | 9830 | E9 |
| 2901 | J4 | 3916 | J10 | 9832 | K8 |
| 2902 | J7 | 3917 | L2 | 9833 | K8 |
| 2903 | K10 | 3919 | H16 | 9834 | M7 |
| 3487 | E2 | 3920 | H15 | 9835 | D10 |
| 3802 | C5 | 3921 | L10 | 9836 | L7 |
| 3803 | B4 | 3922 | G12 | 9837 | G9 |
| 3804 | C7 | 3923 | K9 | 9838 | D11 |
| 3805 | D8 | 3924 | J9 | 9840 | E6 |
| 3806 | E7 | 3925 | J9 | 9841 | F6 |
| 3807 | E6 | 3926 | J9 | 9845 | B6 |
| 3808 | E6 | 3927 | J9 | 9846 | C6 |
| 3809 | E6 | 5850 | H12 | 9847 | F6 |
| 3810 | C5 | 5851 | K7 | 9848 | F5 |
| 3810 | B2 | 5852 | L11 | 9849 | H5 |
| 3811 | B2 | 5853 | L13 | 9850 | L5 |
| 3812 | D5 | 5854 | L12 | 9851 | F5 |
| 3813 | D5 | 5855 | L8 | 9852 | F5 |
| 3814 | D5 | 5856 | L8 | 9853 | E5 |
| 3815 | D3 | 5857 | M11 | 9854 | B4 |
| 3816 | D3 | 5858 | M11 | 9855 | K4 |
| 3817 | D3 | 5859 | M9 | 9856 | K4 |
| 3818 | D3 | 5860 | L13 | 9857 | K4 |
| 3819 | D11 | 5861 | M8 | 9858 | H4 |
| 3820 | D11 | 5862 | H16 | 9859 | F4 |
| 3821 | B4 | 5863 | J16 | 9860 | L4 |
| 3822 | D3 | 5864 | J15 | 9861 | F3 |
| 3823 | E7 | 5865 | J16 | 9862 | G3 |
| 3824 | L2 | 5866 | G16 | 9863 | M3 |
| 3825 | C9 | 6810 | L8 | 9864 | H3 |
| 3826 | C7 | 6811 | J8 | 9865 | C3 |
| 3827 | D8 | 6812 | J8 | 9866 | C3 |
| 3828 | E8 | 6813 | J8 | 9867 | L2 |
| 3829 | F2 | 6814 | H9 | 9869 | D15 |
| 3830 | E2 | 6840 | J2 | 9872 | F2 |

| CD adjustment | Adjust | Adjust to | Measured across |
|---|---|---|---|
| Laser current | 3820 | 50mV ± 2.5mV | 3801 (connector 1801 pin 1 & 2) |
| Focus offset | 3819 | 400mV ± 40mV | 2816 (connector 1801 pin 3 & 4) |

+5 : 5V

+5C : 1.6V

+5D : 1.6V

+C : 9.2V

| 7831 | 7832 | 7870 |
|---|---|---|
| 1 : 3.2V | 1 : 2.4V | 1 : 3.9V |
| 2 : 9.2V | 2 : 9.2V | 2 : 2.1V |
| 3 : 4.0V | 3 : 2.6V | 3 : 2.1V |
| 4 : 0V | 4 : 0V | 4 : 0V |
| 5 : 3.6V | 5 : 2.5V | 5 : 2.1V |
| 6 : 3.6V | 6 : 2.5V | 6 : 2.1V |
| 7 : 3.6V | 7 : 2.5V | 7 : 3.9V |
| 8 : 3.6V | 8 : 2.5V | 8 : 8.75V |

| 7801 | 7853 | 7854 | 7855 |
|---|---|---|---|
| e : 0V | e : 3.3V | e : 3.3V | e : 3.3V |
| b : 0.4V | b : 3.3V | b : 2.6V | b : 4.0V |
| c : 5.0V | c : 9.2V | c : 0V | c : 9.2V |

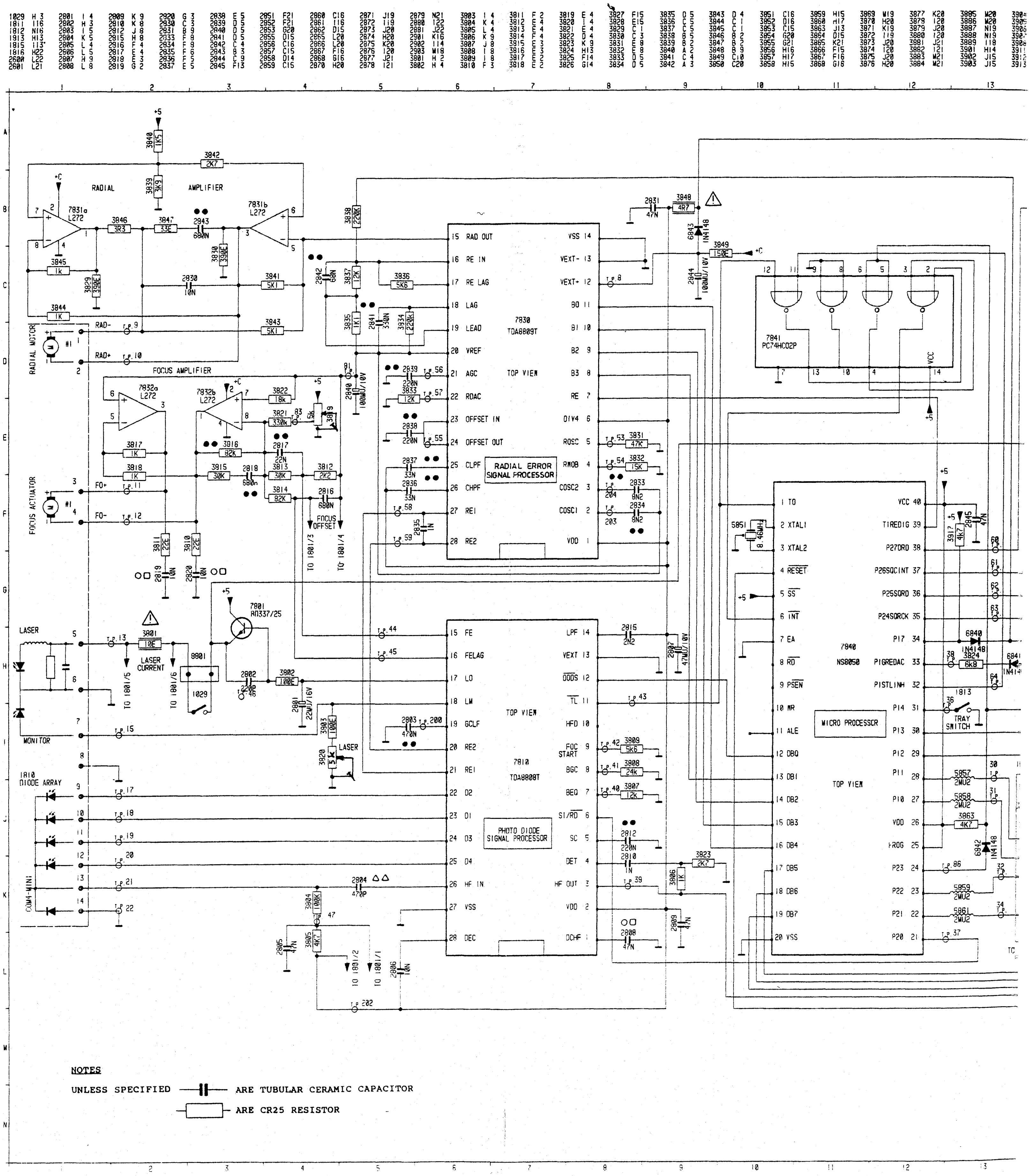
| 7856 | 7875 | 7876 | 7877 |
|---|---|---|---|
| e : 3.3V | e : 5.0V | e : 0V | e : 0V |
| b : 3.2V | b : 4.3V | b : 0V | b : 0.7V |
| c : 0V | c : 4.8V | c : 4.4V | c : 0V |

| 7878 | 7879 | 7880 | 7901 |
|---|---|---|---|
| e : 0V | e : 5.0V | e : 0V | e : 0.9V |
| b : 0V | b : 4.6V | b : 0.7V | b : 0V |
| c : 4.5V | c : 1.5V | c : 0.14V | c : 5.0V |

| 7902/7903 | 7904/7905 | 7600 |
|---|---|---|
| e : 5.0V | e : 0V | 1 : 9.2V |
| b : 5.0V | b : -1.0V | 2 : 0V |
| c : -1.0V | c : -1.0V | 3 : 5.0V |

....V measured in CD mode, power on position

## CDE BOARD DIAGRAM


RADIAL
AMPLIFIER
7831a L272
7831b L272
RADIAL MOTOR
FOCUS AMPLIFIER
7832a L272
7832b L272
FOCUS ACTUATOR
LASER
MONITOR
1810 DIODE ARRAY
LASER CURRENT
7801 MD337/25
FOCUS OFFSET
7830 TDA8809T
TOP VIEW
RADIAL ERROR SIGNAL PROCESSOR
7810 TDA8808T
PHOTO DIODE SIGNAL PROCESSOR
7841 PC74HC02P
7840 NS8050
MICRO PROCESSOR
TRAY SWITCH

NOTES

UNLESS SPECIFIED —||— ARE TUBULAR CERAMIC CAPACITOR

—▭— ARE CR25 RESISTOR

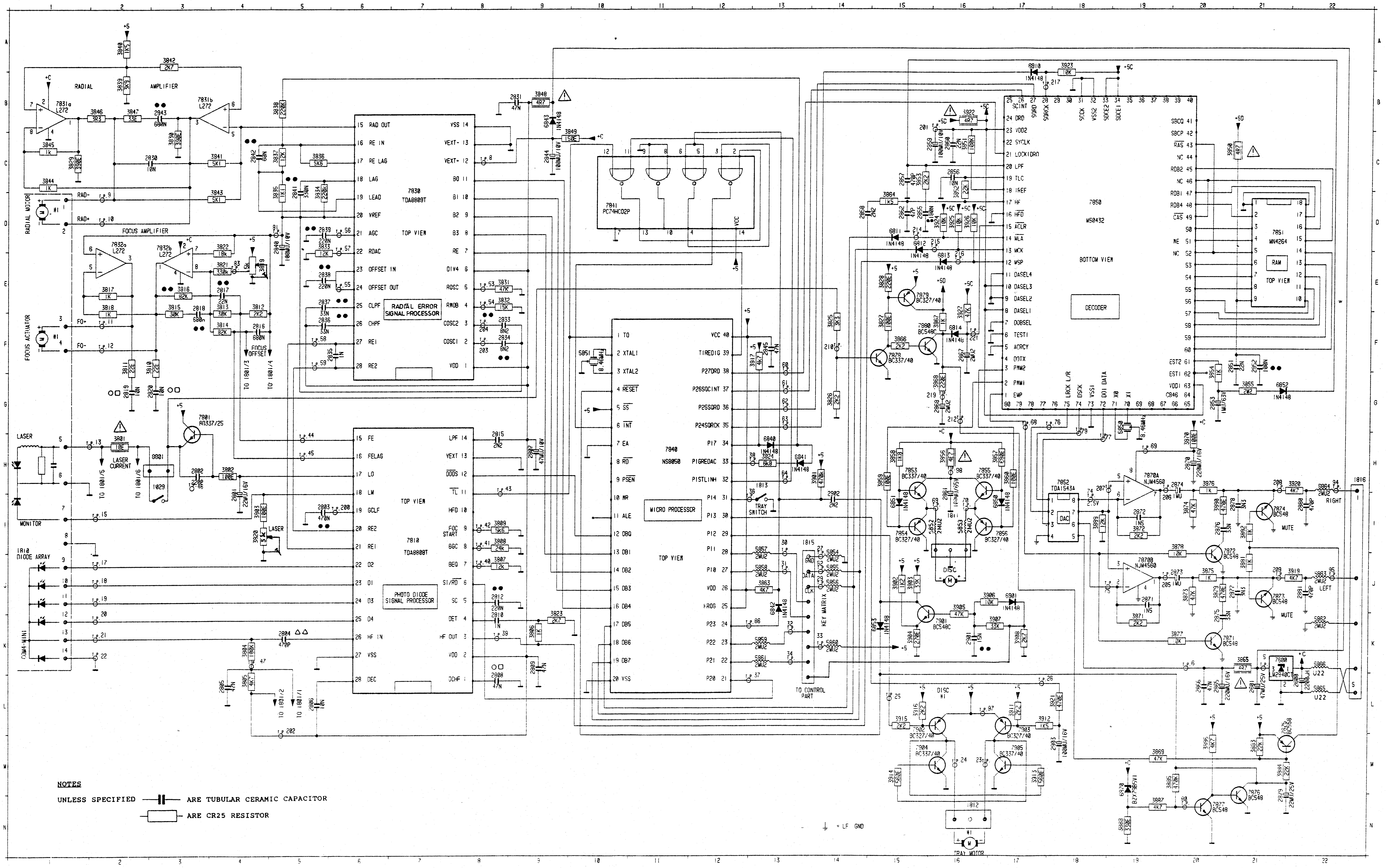
# CDE BOARD DIAGRAM

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1029 | H 3 | 2801 | I 4 | 2809 | K 9 | 2820 | G 3 | 2838 | E 5 | 2851 | F21 | 2860 | C16 | 2871 | J19 |
| 1811 | I16 | 2802 | H 3 | 2810 | K 8 | 2830 | C 3 | 2839 | D 5 | 2852 | F21 | 2861 | I16 | 2872 | I19 |
| 1812 | N16 | 2803 | I 5 | 2812 | J 8 | 2831 | B 9 | 2840 | D 5 | 2853 | G20 | 2862 | D15 | 2873 | J20 |
| 1813 | H13 | 2804 | K 5 | 2815 | H 8 | 2833 | F 8 | 2841 | D 5 | 2855 | D15 | 2865 | L20 | 2874 | H20 |
| 1815 | I13 | 2805 | L 4 | 2816 | F 4 | 2834 | F 9 | 2842 | C 4 | 2856 | C16 | 2866 | L20 | 2875 | K20 |
| 1816 | H22 | 2806 | L 5 | 2817 | E 4 | 2835 | F 6 | 2843 | B 3 | 2857 | C15 | 2867 | F16 | 2876 | I20 |
| 2600 | L22 | 2807 | H 9 | 2818 | E 3 | 2836 | F 5 | 2844 | C 9 | 2858 | D14 | 2868 | G16 | 2877 | J21 |
| 2601 | L21 | 2808 | L 8 | 2819 | G 2 | 2837 | E 5 | 2845 | F13 | 2859 | C15 | 2870 | H20 | 2878 | I21 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2879 | N21 | 3803 | I 4 | 3811 | F 2 | 3819 | E 4 | 3827 | F15 | 3835 | D 5 | 3843 | D 4 | 3851 | C16 |
| 2880 | I22 | 3804 | K 4 | 3812 | E 4 | 3820 | I 4 | 3828 | E15 | 3836 | C 5 | 3844 | C 1 | 3852 | D16 |
| 2881 | J22 | 3805 | L 4 | 3813 | E 4 | 3821 | E 4 | 3829 | C 1 | 3837 | C 5 | 3845 | C 1 | 3853 | C15 |
| 2901 | K16 | 3806 | K 9 | 3814 | F 4 | 3822 | D 4 | 3830 | C 3 | 3838 | B 5 | 3846 | B 2 | 3854 | G20 |
| 2902 | I14 | 3807 | J 8 | 3815 | E 3 | 3823 | K 9 | 3831 | E 8 | 3839 | B 2 | 3847 | B 2 | 3855 | G21 |
| 2903 | M18 | 3808 | I 8 | 3816 | E 3 | 3824 | H13 | 3832 | E 8 | 3840 | A 2 | 3848 | B 9 | 3856 | H16 |
| 3801 | H 2 | 3809 | I 8 | 3817 | E 2 | 3825 | F14 | 3833 | D 5 | 3841 | C 4 | 3849 | C10 | 3857 | H17 |
| 3802 | H 4 | 3810 | F 3 | 3818 | E 2 | 3826 | G14 | 3834 | D 5 | 3842 | A 3 | 3850 | C20 | 3858 | H15 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3859 | H15 | 3869 | M19 | 3877 | K20 | 3885 | M20 | 3904 | K15 | 3914 | M15 | 3923 | A18 | 5853 | I16 |
| 3860 | H17 | 3870 | H20 | 3878 | I20 | 3886 | M20 | 3905 | J16 | 3915 | L15 | 3924 | D16 | 5854 | J14 |
| 3863 | J13 | 3871 | K19 | 3879 | J20 | 3887 | N19 | 3906 | J17 | 3916 | L15 | 3925 | D16 | 5855 | J14 |
| 3864 | D15 | 3872 | I19 | 3880 | I20 | 3888 | N19 | 3907 | K17 | 3917 | F13 | 3926 | D16 | 5856 | J14 |
| 3865 | K21 | 3873 | J20 | 3881 | J21 | 3889 | I18 | 3908 | K17 | 3919 | J22 | 3927 | F16 | 5857 | I13 |
| 3866 | F15 | 3874 | I20 | 3882 | I21 | 3901 | H14 | 3911 | L17 | 3920 | H22 | 5850 | G19 | 5858 | J13 |
| 3867 | F16 | 3875 | J20 | 3883 | M21 | 3902 | J15 | 3912 | L17 | 3921 | L18 | 5851 | F10 | 5859 | K13 |
| 3868 | G16 | 3876 | H20 | 3884 | M21 | 3903 | J15 | 3913 | M17 | 3922 | B16 | 5852 | I16 | 5860 | K14 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5861 | K13 | 6812 | D15 | 6851 | I15 | 7830 | C 7 | 7851 | D21 | 7871 | K20 | 7879 | E15 |
| 5862 | K22 | 6813 | E16 | 6852 | G21 | 7831a | B 1 | 7852 | H18 | 7872 | J20 | 7880 | F15 |
| 5863 | J22 | 6814 | F16 | 6853 | K15 | 7831b | B 3 | 7853 | H15 | 7873 | J21 | 7901 | K16 |
| 5864 | H22 | 6840 | H13 | 6870 | M19 | 7832a | D 2 | 7854 | I15 | 7874 | I21 | 7902 | L15 |
| 5865 | L22 | 6841 | H13 | 6901 | J17 | 7832b | D 3 | 7855 | H17 | 7875 | M21 | 7903 | L17 |
| 5866 | K22 | 6842 | J13 | 7600 | K21 | 7840 | G12 | 7856 | I17 | 7876 | N21 | 7904 | M15 |
| 6810 | A17 | 6843 | B 9 | 7801 | G 4 | 7841 | D10 | 7870A | H19 | 7877 | N20 | 7905 | M17 |
| 6811 | D15 | 6850 | I17 | 7810 | I 7 | 7850 | D19 | 7870B | J19 | 7878 | F15 | 8801 | H 3 |

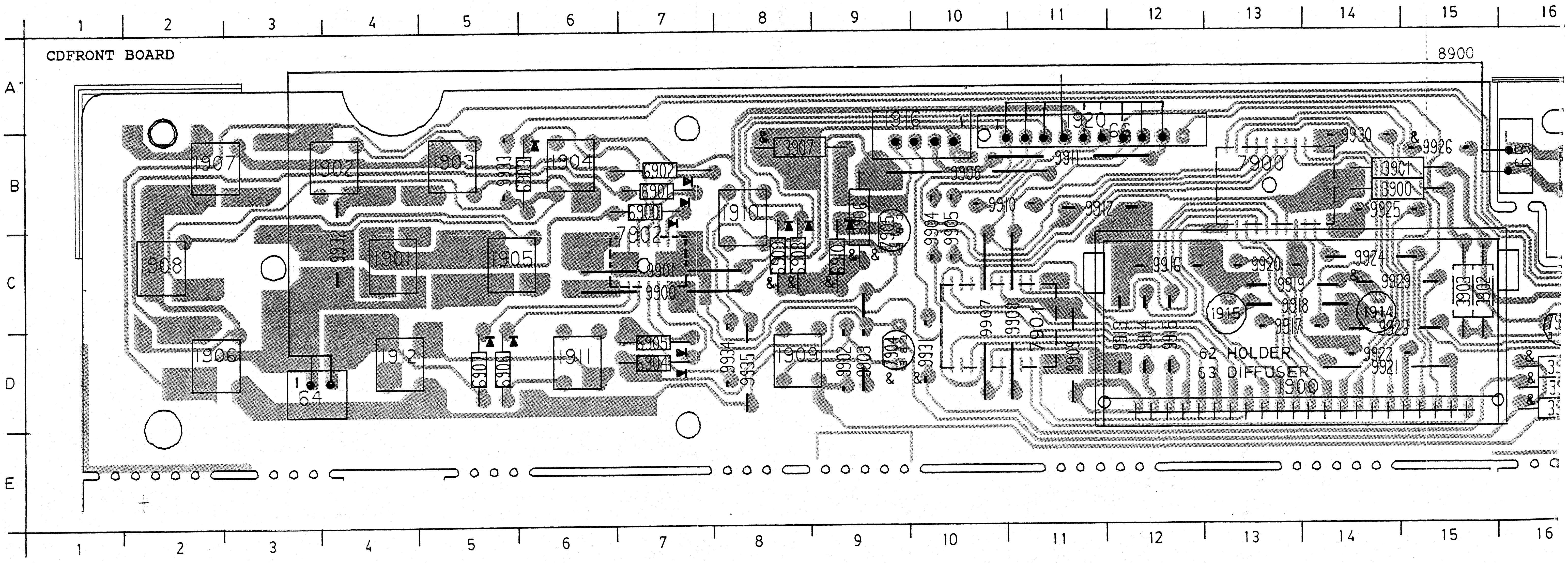

RADIAL AMPLIFIER
7831a L272
7831b L272
FOCUS AMPLIFIER
7832a L272
7832b L272
RADIAL MOTOR
FOCUS ACTUATOR
LASER
MONITOR
LASER CURRENT
7801 BD337/25
1810 DIODE ARRAY
7830 TDA8809T
TOP VIEW
RADIAL ERROR SIGNAL PROCESSOR
7810 TDA8808T
PHOTO DIODE SIGNAL PROCESSOR
7841 PC74HC02P
7840 NS8050
MICRO PROCESSOR
TRAY SWITCH
KEY MATRIX
TO CONTROL PART
7850 M50432
BOTTOM VIEW
DECODER
7851 MN4264
RAM
7852 TDA1543A
DAC
7870A NJM4560
7870B NJM4560
RIGHT
LEFT
MUTE
DISC
TRAY MOTOR
7600 LM2940CT
= LF GND

**NOTES**

UNLESS SPECIFIED —||— ARE TUBULAR CERAMIC CAPACITOR

—▭— ARE CR25 RESISTOR

| | |
|---|---|
| 0064 | D3 |
| 0065 | B16 |
| 1900 | D13 |
| 1901 | C4 |
| 1902 | B4 |
| 1903 | B5 |
| 1904 | B6 |
| 1905 | C5 |
| 1906 | D2 |
| 1907 | B2 |
| 1908 | C2 |
| 1909 | D8 |
| 1910 | B8 |
| 1911 | D6 |
| 1912 | D4 |
| 1913 | B16 |
| 1914 | C14 |
| 1915 | C13 |
| 1916 | A9 |
| 1920 | A11 |
| 2900 | D17 |
| 2901 | B20 |
| 2902 | B19 |
| 2903 | B19 |
| 3900 | B14 |
| 3901 | B14 |
| 3902 | C15 |
| 3903 | C15 |
| 3904 | D16 |
| 3905 | D16 |
| 3906 | B9 |
| 3907 | B8 |
| 3908 | B18 |
| 3909 | B19 |
| 3910 | D19 |
| 3911 | B18 |
| 3912 | B18 |
| 3913 | D16 |
| 3914 | B19 |
| 3915 | D19 |
| 3916 | D19 |
| 3917 | C20 |
| 3918 | C20 |
| 3919 | D20 |
| 6900 | B7 |
| 6901 | B7 |
| 6902 | B7 |
| 6903 | B6 |
| 6904 | D7 |
| 6905 | D7 |
| 6907 | D5 |
| 6908 | C8 |
| 6908 | D5 |
| 6909 | C8 |
| 6910 | C9 |
| 6911 | D17 |
| 6912 | D17 |
| 6913 | B20 |
| 6914 | B20 |
| 6915 | D20 |
| 7900 | B13 |
| 7900 | D10 |
| 7901 | D9 |
| 7902 | C7 |
| 7903 | C16 |
| 7905 | C9 |
| 7906 | D18 |
| 7907 | C20 |
| 7908 | D20 |
| 8900 | A15 |
| 9900 | C7 |
| 9901 | C7 |
| 9902 | D9 |
| 9903 | D9 |
| 9904 | C10 |
| 9905 | C10 |
| 9906 | B10 |
| 9907 | C10 |
| 9908 | C11 |
| 9909 | D11 |
| 9910 | B10 |
| 9911 | B11 |
| 9912 | B11 |
| 9913 | D12 |



CDFRONT BOARD
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
A B C D E
8900
1907
1902
1903
1904
1908
1901
1905
1906
1912
1911
1909
1910
1916
1920
66
3907
7900
3901
3900
9930
9926
9925
65
6902
6901
6900
7902
9901
9900
9933
6903
9932
6905
6904
6907
6906
9934
9935
9902
9903
7904
7905
9931
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7901
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9913
9914
9915
9916
9920
9919
9918
9917
9924
9929
9923
9922
9921
1915
1914
3903
3902
62 HOLDER
63 DIFFUSER
1900
64
&

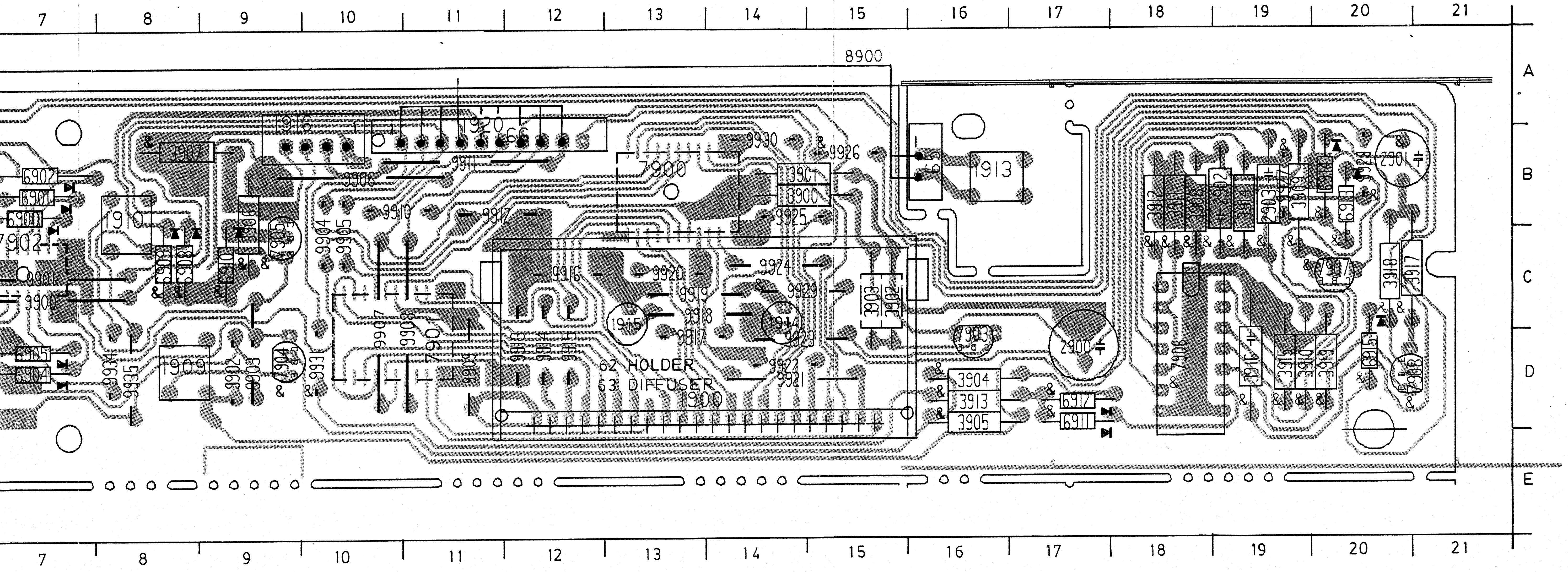
& NOT FOR FW2012

7903

e : 5.0V
b : 4.3V
c : 4.8V

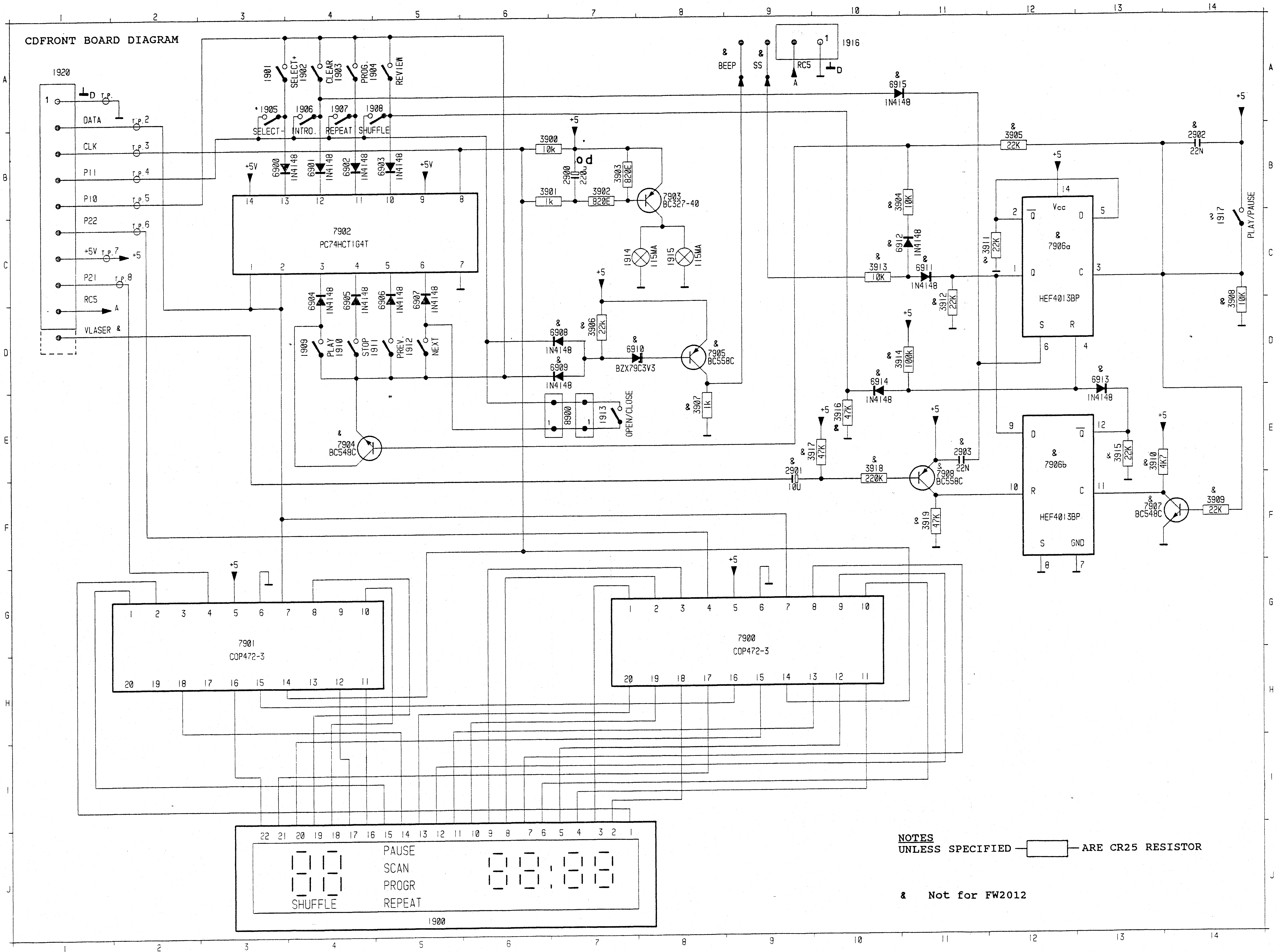
....V measured in CD mode, power on position

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16 | 3911 | B18 | 3918 | C20 | 6905 | D7 | 6912 | D17 | 7902 | C7 | 9900 | C7 | 9907 | C10 | 9914 | D12 | 9921 | D14 | 9928 | B20 | 9935 | D8 |
| 16 | 3912 | B18 | 3919 | D20 | 6907 | D5 | 6913 | B20 | 7903 | C16 | 9901 | C7 | 9908 | C11 | 9915 | D12 | 9922 | D14 | 9929 | C14 |  |  |
| 9 | 3913 | D16 | 6900 | B7 | 6908 | C8 | 6914 | B20 | 7905 | C9 | 9902 | D9 | 9909 | D11 | 9916 | C12 | 9923 | D14 | 9930 | B14 |  |  |
| 8 | 3914 | B19 | 6901 | B7 | 6908 | D5 | 6915 | D20 | 7906 | D18 | 9903 | D9 | 9910 | B10 | 9917 | C13 | 9924 | C14 | 9931 | D10 |  |  |
| 18 | 3915 | D19 | 6902 | B7 | 6909 | C8 | 7900 | B13 | 7907 | C20 | 9904 | C10 | 9911 | B11 | 9918 | C13 | 9925 | B14 | 9932 | C4 |  |  |
| 19 | 3916 | D19 | 6903 | B6 | 6910 | C9 | 7900 | D10 | 7908 | D20 | 9905 | C10 | 9912 | B11 | 9919 | C13 | 9926 | B15 | 9933 | B5 |  |  |
| 19 | 3917 | C20 | 6904 | D7 | 6911 | D17 | 7901 | D9 | 8900 | A15 | 9906 | B10 | 9913 | D12 | 9920 | C13 | 9927 | B19 | 9934 | D8 |  |  |


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
A
B
C
D
E
8900
1916
1920
3907
6902
6901
6900
7902
1910
9901
9900
9906
9911
9910
9912
7900
9930
9926
3901
3900
9925
1913
3912
3911
3908
2902
3914
2903
3909
6914
2901
6913
3906
7905
6910
9904
9905
9916
9920
9919
9918
9917
1915
1914
9924
9929
9923
9922
9921
3903
3902
7903
2900
7906
3916
3915
3910
3919
6915
7908
3918
3917
7907
6905
6904
9934
9935
1909
9902
9903
7904
9931
9907
9908
7901
9909
9913
9914
9915
62 HOLDER
63 DIFFUSER
1900
3904
3913
3905
6912
6911

measured in CD mode, power on position

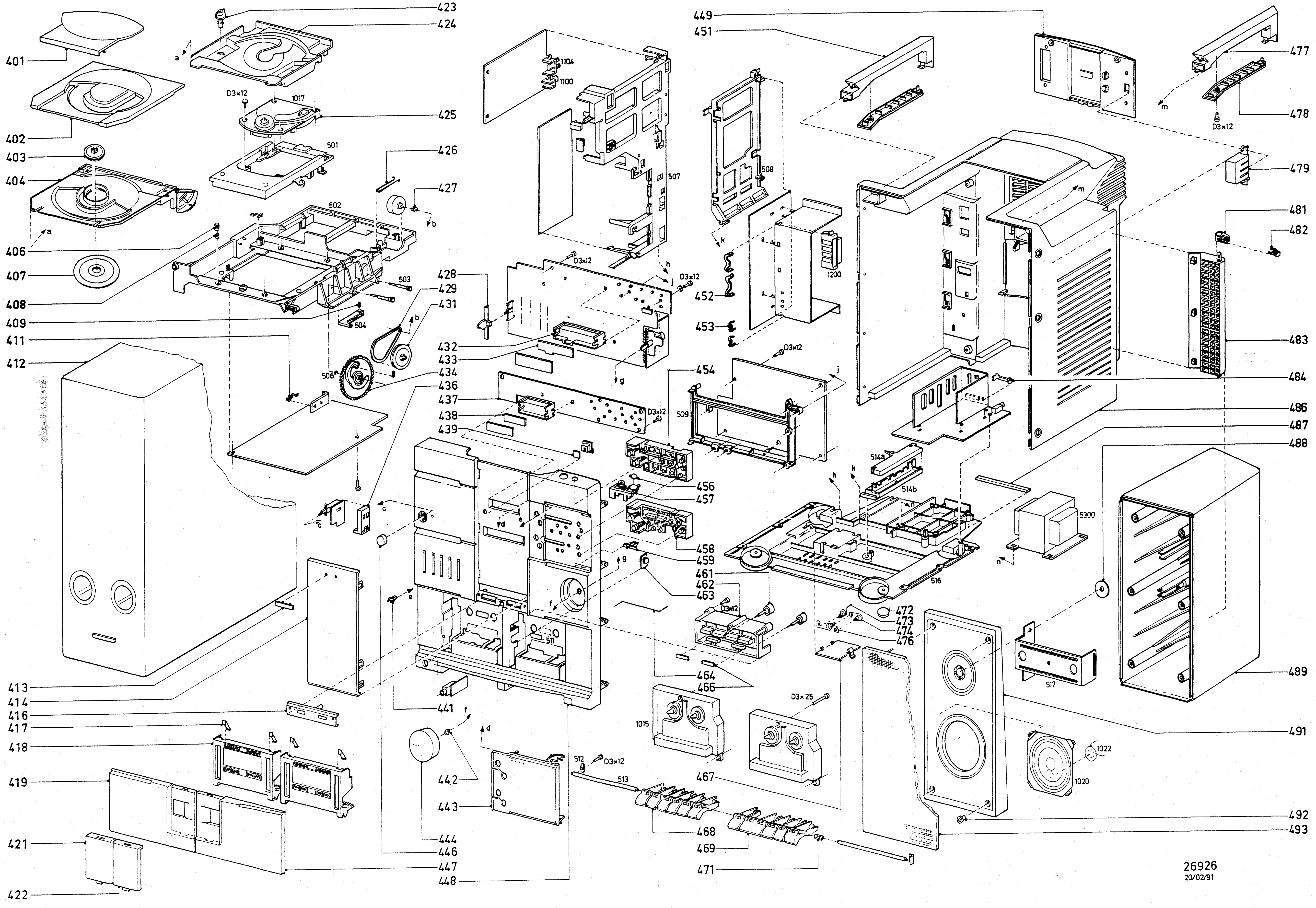
## CDFRONT BOARD DIAGRAM


1920
DATA
CLK
P11
P10
P22
+5V
P21
RC5
VLASER
T.P.2
T.P.3
T.P.4
T.P.5
T.P.6
T.P.7
T.P.8
1901
SELECT+ 1902
CLEAR 1903
PROG. 1904
REVIEW
1905 SELECT-
1906 INTRO.
1907 REPEAT
1908 SHUFFLE
6900 1N4148
6901 1N4148
6902 1N4148
6903 1N4148
7902
PC74HCT164T
6904 1N4148
6905 1N4148
6906 1N4148
6907 1N4148
1909 PLAY
1910 STOP
1911 PREV.
1912 NEXT
7904 BC548C
3900 10k
2900 220u
3901 1k
3902 820E
3903 820E
7903 BC327-40
1914 115MA
1915 115MA
6908 1N4148
6909 1N4148
3906 22k
6910 BZX79C3V3
7905 BC558C
3907 1k
8900
1913 OPEN/CLOSE
BEEP
SS
RC5
1916
6915 1N4148
3905 22K
2902 22N
3904 10K
6912 1N4148
3913 10K
6911 1N4148
3912 22K
3914 100k
6914 1N4148
3916 47K
3917 47K
2901 10U
3918 220K
7908 BC558C
2903 22N
3919 47K
3911 22K
7906a
HEF4013BP
7906b
HEF4013BP
Vcc
GND
6913 1N4148
3915 22K
3910 4K7
7907 BC548C
3909 22K
3908 10K
1917 PLAY/PAUSE
7901
COP472-3
7900
COP472-3
PAUSE
SCAN
PROGR
REPEAT
SHUFFLE
1900

NOTES
UNLESS SPECIFIED —▭— ARE CR25 RESISTOR

& Not for FW2012

| | |
|---|---|
| 1900 | J 5 |
| 1901 | A 3 |
| 1902 | A 4 |
| 1903 | A 4 |
| 1904 | A 5 |
| 1905 | A 3 |
| 1906 | A 4 |
| 1907 | A 4 |
| 1908 | A 5 |
| 1909 | D 4 |
| 1910 | D 4 |
| 1911 | D 5 |
| 1912 | D 5 |
| 1913 | E 7 |
| 1914 | C 7 |
| 1915 | C 8 |
| 1916 | 9 |
| 1917 | C14 |
| 1920 | A 1 |
| 2900 | B 7 |
| 2901 | E 9 |
| 2902 | B14 |
| 2903 | E11 |
| 3900 | B 7 |
| 3901 | B 7 |
| 3902 | B 7 |
| 3903 | B 7 |
| 3904 | B11 |
| 3905 | B12 |
| 3906 | D 7 |
| 3907 | E 8 |
| 3908 | D14 |
| 3909 | F14 |
| 3910 | E13 |
| 3911 | C12 |
| 3912 | D11 |
| 3913 | C10 |
| 3914 | D11 |
| 3915 | E13 |
| 3916 | E10 |
| 3917 | E10 |
| 3918 | E10 |
| 3919 | F11 |
| 6900 | B 3 |
| 6901 | B 4 |
| 6902 | B 4 |
| 6903 | B 5 |
| 6904 | C 4 |
| 6905 | C 4 |
| 6906 | C 5 |
| 6907 | C 5 |
| 6908 | D 7 |
| 6909 | D 7 |
| 6910 | D 7 |
| 6911 | C11 |
| 6912 | C11 |
| 6913 | D13 |
| 6914 | D10 |
| 6915 | A10 |
| 7900 | G 9 |
| 7901 | G 3 |
| 7902 | C 4 |
| 7903 | B 8 |
| 7904 | E 4 |
| 7905 | D 8 |
| 7906a | C12 |
| 7906b | E12 |
| 7907 | F13 |
| 7908 | F11 |
| 8900 | E 7 |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|---|---|---|
| 401 |  | 4822 450 61717 |
| 402 | * | 4822 444 60743 |
| 402 | @ | 4822 444 60745 |
| 403 |  | 4822 532 51871 |
| 404 |  | 4822 444 50651 |
| 406 |  | 4822 492 51902 |
| 407 |  | 4822 466 93014 |
| 408 |  | 4822 532 61168 |
| 409 |  | 4822 492 51935 |
| 411 |  | 4822 255 40179 |
| 412 | * | 4822 445 10279 |
| 412 | @ | 4822 445 10281 |
| 413 | * | 4822 459 11003 |
| 413 | @ | 4822 459 11032 |
| 414 |  | 4822 450 61718 |
| 416 |  | 4822 413 70275 |
| 417 |  | 4822 492 52197 |
| 418 |  | 4822 443 63037 |
| 419 |  | 4822 443 63304 |
| 421 |  | 4822 450 61719 |
| 422 |  | 4822 450 61721 |
| 423 |  | 4822 535 80855 |
| 424 |  | 4822 466 93004 |
| 425 |  | 4822 691 30247 |
| 426 |  | 4822 492 63746 |
| 427 |  | 4822 528 81447 |
| 428 |  | 4822 411 61801 |
| 429 |  | 4822 358 31132 |
| 431 |  | 4822 522 32359 |
| 432 |  | 4822 255 41091 |
| 433 |  | 4822 466 70673 |
| 434 |  | 4822 522 33076 |
| 436 |  | 4822 462 41809 |
| 437 |  | 4822 256 91477 |
| 438 |  | 4822 466 70666 |
| 439 |  | 4822 454 12732 |
| 441 |  | 4822 276 13079 |
| 442 |  | 4822 492 51374 |
| 443 |  | 4822 444 60744 |
| 444 |  | 4822 411 61802 |
| 446 |  | 4822 410 61283 |
| 447 |  | 4822 443 63305 |
| 448 |  | 4822 426 51485 |
| 449 | $ | 4822 426 60606 |
| 449 | # | 4822 426 60607 |
| 449 | @ | 4822 426 60609 |
| 451 |  | 4822 498 10414 |
| 452 |  | 4822 255 41035 |
| 453 |  | 4822 492 63051 |
| 454 |  | 4822 410 61282 |
| 456 |  | 4822 462 41811 |
| 457 |  | 4822 410 61281 |
| 458 |  | 4822 413 51374 |
| 459 |  | 4822 410 61277 |
| 461 |  | 4822 380 20393 |
| 462 |  | 4822 413 51373 |
| 463 |  | 4822 529 10251 |
| 464 |  | 4822 492 70732 |
| 466 |  | 4822 462 41812 |
| 467 |  | 4822 426 60605 |
| 468 |  | 4822 410 61278 |
| 469 |  | 4822 410 61279 |
| 471 |  | 4822 535 93225 |
| 472 |  | 4822 462 40683 |
| 473 |  | 4822 492 52175 |
| 474 |  | 4822 492 63982 |
| 476 |  | 4822 290 80606 |
| 477 |  | 4822 498 10415 |
| 478 |  | 4822 498 70101 |
| 479 |  | 4822 404 21082 |
| 481 |  | 4822 404 10846 |
| 482 |  | 4822 466 93013 |
| 483 |  | 4822 404 10845 |
| 484 |  | 4822 255 41035 |
| 486 | * | 4822 426 20204 |
| 486 | @ | 4822 426 20205 |
| 487 |  | 4822 462 71764 |
| 488 |  | 4822 466 93003 |
| 489 |  | 4822 445 40113 |
| 491 | @ | 4822 445 10278 |
| 491 | * | 4822 445 10277 |
| 492 |  | 4822 532 52004 |
| 493 | * | 4822 445 30222 |
| 493 | @ | 4822 445 30223 |
| IFU | * | 4822 736 21123 |
| IFU | @ | 4822 736 21124 |

# For -/21 only
@ For -/37 only
* Not for -/37 only
$ Not for -/21 /37 only

**GB WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

**ESD**

**NL WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

**F ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**D WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

**I AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

## MISCELLANEOUS

| | | | |
|---|---|---|---|
| 1014 | 4822 361 21327 | | MOTOR |
| 1017 | 4822 691 30247 | | CDM4 MINI |
| 1020 | 4822 240 50315 | | LOUDSPEAKER |
| 1022 | 4822 280 10222 | | BUZZER |
| 1025# | 4822 277 21483 | ⚠ | VOLTAGE SELECTOR |
| 1029 | 4822 271 30598 | | SWITCH LEAF |
| 1033 | 4822 130 82027 | | TLR220 RD |
| 1100 | 4822 267 31128 | | AERIAL SOCKET |
| 1104@ | 4822 267 40668 | | SOCKET AERIAL |
| 1105# | 4822 277 30862 | | GRID SWITCH |
| 1200* | 4822 267 31176 | | SOCKET SPEAKER |
| 1200@ | 4822 267 31107 | | SOCKET SPEAKER |
| 1258 | 4822 267 30968 | | SOCKET HEADPHONE |
| 1260@ | 4822 253 30334 | ⚠ | FUSE T1.25A |
| 1261* | 4822 253 10065 | ⚠ | FUST T5A |
| 1261@ | 4822 252 51123 | ⚠ | FUSE T6.3A |
| 1263* | 4822 071 52002 | ⚠ | FUST T2A |
| 1263@ | 4822 252 51121 | ⚠ | FUSE T3.15A |
| 1264 | 4822 276 12887 | | SWITCH POWER |
| 1265 | 4822 267 30933 | | SOCKET SUBWOOFER |
| 1400 | 4822 130 90986 | | LCD TUNER |
| 1401 | 4822 276 12465 | | SWITCH KEY |
| 1402 | 4822 276 12465 | | SWITCH KEY |
| 1403 | 4822 276 12465 | | SWITCH KEY |
| 1404 | 4822 276 12465 | | SWITCH KEY |
| 1405 | 4822 276 12465 | | SWITCH KEY |
| 1406 | 4822 276 12465 | | SWITCH KEY |
| 1407 | 4822 276 12465 | | SWITCH KEY |
| 1408 | 4822 276 12465 | | SWITCH KEY |
| 1409 | 4822 276 12465 | | SWITCH KEY |
| 1410 | 4822 276 12465 | | SWITCH KEY |
| 1411 | 4822 276 12465 | | SWITCH KEY |
| 1412 | 4822 276 12465 | | SWITCH KEY |
| 1413 | 4822 276 12465 | | SWITCH KEY |
| 1414 | 4822 276 12465 | | SWITCH KEY |
| 1416 | 4822 276 12465 | | SWITCH KEY |
| 1417 | 4822 276 12465 | | SWITCH KEY |
| 1421 | 4822 277 21523 | | ALARM SELECTOR |
| 1425 | 4822 134 40965 | | LAMP 12V 150mA |
| 1554 | 4822 267 30631 | | SOCKET AUX/TV |
| 1810 | 4822 267 30786 | | SOCKET FLEX 14P |
| 1813 | 4822 276 12465 | | SWITCH KEY |
| 1900 | 4822 130 90826 | | LCD CD |
| 1901 | 4822 276 12465 | | SWITCH KEY |
| 1902 | 4822 276 12465 | | SWITCH KEY |
| 1903 | 4822 276 12465 | | SWITCH KEY |
| 1904 | 4822 276 12465 | | SWITCH KEY |
| 1905 | 4822 276 12465 | | SWITCH KEY |
| 1906 | 4822 276 12465 | | SWITCH KEY |
| 1907 | 4822 276 12465 | | SWITCH KEY |
| 1908 | 4822 276 12465 | | SWITCH KEY |
| 1909 | 4822 276 12465 | | SWITCH KEY |
| 1910 | 4822 276 12465 | | SWITCH KEY |
| 1911 | 4822 276 12465 | | SWITCH KEY |
| 1912 | 4822 276 12465 | | SWITCH KEY |
| 1913 | 4822 276 12465 | | SWITCH KEY |
| 1914 | 4822 134 40885 | | LAMP 5V 115mA |
| 1915 | 4822 134 40885 | | LAMP 5V 115mA |

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|---|---|---|
| 5109 | 4822 242 73546 | CERAM FILTER KIT |
| 5110 | 4822 303 50034 | X'TAL 7.2MHz |
| 5401 | 4822 242 73577 | RESONATOR 4.5MHz |
| 5402 | 4822 242 70938 | X'TAL 32.768kHZ |
| 5603 | 4822 242 73768 | FILTER |
| 5604 | 4822 242 73768 | FILTER |
| 5850 | 4822 242 72565 | RESONATOR |
| 5851 | 4822 242 72565 | RESONATOR |
| * | 4822 218 10394 | REMOTE CONTROL |
| @ | 4822 218 10395 | REMOTE CONTROL |

## CAPACITORS

| | | |
|---|---|---|
| 2102 | 5322 122 32531 | CHIP 100pF |
| 2103 | 4822 122 31727 | CHIP 470pF |
| 2105 | 4822 125 60101 | TRIM 3-11pF |
| 2107 | 5322 122 32268 | CHIP 470pF |
| 2108 | 4822 122 31727 | CHIP 470pF |
| 2109 | 5322 122 32269 | CHIP 6.8pF |
| 2110 | 4822 122 31727 | CHIP 470pF |
| 2112 | 4822 122 31808 | CHIP 150pF |
| 2113 | 5322 122 34123 | CHIP 1nF |
| 2114 | 4822 122 32927 | CHIP 220nF |
| 2115 | 4822 122 32927 | CHIP 220nF |
| 2116 | 4822 122 31797 | CHIP 22nF |
| 2120 | 4822 122 33496 | CHIP 100nF |
| 2129 | 5322 122 32268 | CHIP 470pF |
| 2131 | 5322 122 34123 | CHIP 1nF |
| 2132 | 5322 122 32654 | CHIP 22nF |
| 2133 | 4822 122 31727 | CHIP 470pF |
| 2134 | 4822 122 32927 | CHIP 220nF |
| 2135♠ | 4822 125 60101 | TRIM 3-11pF |
| 2135δ | 4822 125 60102 | TRIM 5.2-30pF |
| 2136♠ | 4822 121 51288 | PP 100pF 630V |
| 2137♠ | 5322 122 32658 | CHIP 22pF |
| 2138 | 4822 122 32927 | CHIP 220nF |
| 2139♠ | 4822 125 60101 | TRIM 3-11pF |
| 2139δ | 4822 125 60102 | TRIM 5.2-30pF |
| 2140♠ | 5322 121 50999 | PP 470pF 400V |
| 2140♦ | 4822 121 51381 | PP 560pF 400V |
| 2140♣ | 4822 121 51263 | PP 510pF 400V |
| 2141 | 5322 122 32654 | CHIP 22nF |
| 2142♠ | 4822 121 43253 | PP 360pF 400V |
| 2143♠ | 4822 122 32482 | CHIP 22pF |
| 2147 | 4822 122 33339 | CHIP 4.7nF |
| 2148 | 4822 122 33339 | CHIP 4.7nF |
| 2150 | 5322 122 32654 | CHIP 22nF |
| 2153 | 5322 122 32965 | CHIP 18pF |
| 2154 | 5322 122 32481 | CHIP 15pF |
| 2155 | 4822 122 33806 | CHIP 820pF |
| 2156 | 5322 122 32654 | CHIP 22nF |
| 2158 | 4822 122 31727 | CHIP 470pF |
| 2159 | 5322 122 32268 | CHIP 470pF |
| 2160 | 5322 122 32268 | CHIP 470pF |
| 2161 | 4822 122 32927 | CHIP 220nF |
| 2164 | 5322 122 32967 | CHIP 5.6pF |
| 2165 | 4822 122 32927 | CHIP 220nF |
| 2168 | 4822 122 33891 | CHIP 3.3nF |
| 2169 | 5322 122 32654 | CHIP 22nF |
| 2412 | 4822 125 50309 | TRIM 20pF 100V |

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MHz
. 4.5MHz
768kHZ
NTROL
NTROL
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F
pF
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F
F
pF
30pF
630V
F
pF
30pF
400V
400V
400V
400V
F
F
F
F
F
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100V

| RESISTORS | | | |
|---|---|---|---|
| 3100 | 4822 051 20229 | | CHIP 22Ω |
| 3102α | 4822 051 20561 | | CHIP 560Ω |
| 3102♦ | 4822 051 20331 | | CHIP 330Ω |
| 3103 | 4822 051 20562 | | CHIP 5.6kΩ |
| 3107 | 4822 051 20331 | | CHIP 330Ω |
| 3109 | 4822 051 20472 | | CHIP 4.7kΩ |
| 3110 | 4822 051 20222 | | CHIP 2.2kΩ |
| 3113 | 4822 051 20271 | | CHIP 270Ω |
| 3114 | 4822 051 20103 | | CHIP 10kΩ |
| 3115 | 4822 100 11213 | | TRIMMER 22kΩ |
| 3116 | 4822 051 20101 | | CHIP 100Ω |
| 3118 | 4822 051 20103 | | CHIP 10kΩ |
| 3119 | 4822 051 20103 | | CHIP 10kΩ |
| 3120 | 4822 051 20135 | | CHIP 1MΩ |
| 3121 | 4822 051 10102 | | CHIP 1kΩ |
| 3122 | 4822 051 20135 | | CHIP 1MΩ |
| 3123 | 4822 051 20103 | | CHIP 10kΩ |
| 3129 | 4822 051 20104 | | CHIP 100kΩ |
| 3131 | 4822 051 20008 | | CHIP 0Ω |
| 3136 | 4822 051 20472 | | CHIP 4.7kΩ |
| 3137 | 4822 051 20472 | | CHIP 4.7kΩ |
| 3139 | 4822 051 20104 | | CHIP 100kΩ |
| 3140 | 4822 050 23301 | | 330Ω 0.125W |
| 3144 | 4822 051 10102 | | CHIP 1kΩ |
| 3146 | 4822 053 10151 | | PR01 150Ω |
| 3148 | 4822 051 20562 | | CHIP 5.6kΩ |
| 3149 | 4822 051 20474 | | CHIP 470kΩ |
| 3151 | 4822 051 20223 | | CHIP 22kΩ |
| 3154 | 4822 051 20333 | | CHIP 33kΩ |
| 3155 | 4822 051 20223 | | CHIP 22kΩ |
| 3156 | 4822 051 20562 | | CHIP 5.6kΩ |
| 3158 | 4822 051 20331 | | CHIP 330Ω |
| 3159 | 4822 051 20471 | | CHIP 470Ω |
| 3160 | 4822 051 20153 | | CHIP 15kΩ |
| 3161 | 4822 051 20008 | | CHIP 0Ω |
| 3163 | 4822 051 20681 | | CHIP 680Ω |
| 3255 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3256 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3257 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3258 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3273 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3274 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3291@ | 4822 053 10568 | ⚠ | PR01 5.6Ω |
| 3292@ | 4822 053 10568 | ⚠ | PR01 5.6Ω |
| 3293@ | 4822 053 10568 | ⚠ | PR01 5.6Ω |
| 3294@ | 4822 053 10568 | ⚠ | PR01 5.6Ω |
| 3295 | 4822 052 10129 | ⚠ | NFR25 12Ω |
| 3321 | 4822 052 10129 | ⚠ | NFR25 12Ω |
| 3322 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3323 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3324 | 4822 052 10479 | ⚠ | NFR25 47Ω |
| 3325 | 4822 052 10228 | ⚠ | NFR25 2.2Ω |
| 3338@ | 4822 053 21106 | ⚠ | VR37 10MΩ |
| 3339@ | 4822 053 21106 | ⚠ | VR37 10MΩ |
| 3401 | 4822 052 10109 | ⚠ | NFR25 10Ω |
| 3495 | 4822 052 10108 | ⚠ | NFR25 1Ω |
| 3496 | 4822 052 10108 | ⚠ | NFR25 1Ω |
| 3500 | 4822 102 10414 | | POTM 20k X 2 |
| 3505 | 4822 101 21102 | | POTM 50kB X 2 |
| 3507 | 4822 101 21102 | | POTM 50kB X 2 |
| 3509 | 4822 101 21102 | | POTM 50kB X 2 |
| 3511 | 4822 101 21102 | | POTM 50kB X 2 |
| 3513 | 4822 101 21102 | | POTM 50kB X 2 |
| 3542 | 4822 052 10479 | ⚠ | NFR25 47Ω |
| 3568 | 4822 052 10229 | ⚠ | NFR25 22Ω |
| 3593 | 4822 052 10229 | ⚠ | NFR25 22Ω |
| 3596 | 4822 052 10279 | ⚠ | NFR25 27Ω |
| 3599 | 4822 050 21001 | ⚠ | CR25 100Ω |
| 3711 | 4822 052 10479 | ⚠ | NFR25 47Ω |
| 3715 | 4822 100 11163 | | TRIMMER 100kΩ |
| 3716 | 4822 100 11163 | | TRIMMER 100kΩ |
| 3801 | 4822 052 10109 | ⚠ | NFR25 10Ω |
| 3819 | 4822 100 11088 | | TRIMMER 5kΩ |
| 3820 | 4822 100 11088 | | TRIMMER 5kΩ |
| 3848 | 4822 052 10478 | ⚠ | NFR25 4.7Ω |
| 3850 | 4822 052 10478 | ⚠ | NFR25 4.7Ω |
| 3856 | 4822 052 10478 | ⚠ | NFR25 4.7Ω |
| 3865 | 4822 052 10478 | ⚠ | NFR25 4.7Ω |
| 3922 | 4822 052 10478 | ⚠ | NFR25 4.7Ω |

| COILS | | | |
|---|---|---|---|
| 5102 | 4822 156 30947 | | FM RF COIL |
| 5103 | 4822 156 30947 | | FM RF COIL |
| 5104 | 4822 157 53192 | | COIL 0.22μH |
| 5105 | 4822 156 20816 | | AM IF COIL |
| 5106 | 4822 158 60511 | | AM IF COIL |
| 5107♠ | 4822 526 10466 | | FERROCEPTOR |
| 5107δ | 4822 158 60602 | | FERROCEPTOR |
| 5108♠ | 4822 156 10459 | | AM OSC COIL |
| 5108δ | 4822 157 51844 | | AM OSC COIL |
| 5131@ | 4822 157 60365 | | BALUN COIL |
| 5300 | 4822 146 30978 | ⚠ | TRANSFOR MAINS |
| 5403 | 4822 157 53123 | | COIL 100μH |
| 5404 | 4822 157 53123 | | COIL 100μH |
| 5405 | 4822 157 62552 | | COIL 2.2μH |
| 5601 | 4822 156 20811 | | COIL 36μH |
| 5602 | 4822 156 20811 | | COIL 36μH |
| 5605 | 4822 156 20811 | | COIL 36μH |
| 5606 | 4822 156 20811 | | COIL 36μH |
| 5701 | 4822 156 20946 | | OSC COIL 100kHZ |
| 5852 | 4822 157 62552 | | COIL 2.2μH |
| 5853 | 4822 157 62552 | | COIL 2.2μH |
| 5854 | 4822 157 62552 | | COIL 2.2μH |
| 5855 | 4822 157 62552 | | COIL 2.2μH |
| 5856 | 4822 157 62552 | | COIL 2.2μH |
| 5857 | 4822 157 62552 | | COIL 2.2μH |
| 5858 | 4822 157 62552 | | COIL 2.2μH |

| | |
|---|---|
| # | For -/21 only |
| ♣ | For -/30 only |
| @ | For -/37 only |
| ♠ | For -/20/25 only |
| ♦ | For -/21/37 only |
| α | For -/20/25/30 only |
| * | Not for -/37 only |
| δ | Not for -/00/25 only |

## COILS

| | | |
|---|---|---|
| 5859 | 4822 157 62552 | COIL 2.2μH |
| 5860 | 4822 157 62552 | COIL 2.2μH |
| 5861 | 4822 157 62552 | COIL 2.2μH |
| 5862 | 4822 157 62552 | COIL 2.2μH |
| 5863 | 4822 157 62552 | COIL 2.2μH |
| 5864 | 4822 157 62552 | COIL 2.2μH |
| 5865 | 4822 157 53192 | COIL 0.22μH |
| 5866 | 4822 157 53192 | COIL 0.22μH |

## SEMICONDUCTORS

| | | |
|---|---|---|
| 6101 | 4822 130 30621 | 1N4148 |
| 6102 | 5322 130 31684 | BB809 |
| 6103 | 5322 130 31684 | BB809 |
| 6104 | 4822 130 30621 | 1N4148 |
| 6105 | 4822 130 81673 | 1SV149 |
| 6106 | 4822 130 81673 | 1SV149 |
| 6107 | 4822 130 34174 | BZX79-C4V7 |
| 6131δ | 4822 130 30621 | 1N4148 |
| 6132@ | 4822 130 30621 | 1N4148 |
| 6133# | 4822 130 30621 | 1N4148 |
| 6292 | 4822 130 31253 | BZX79C2V4 |
| 6295 | 4822 130 30621 | 1N4148 |
| 6301 | 4822 130 30621 | 1N4148 |
| 6307 | 4822 130 31253 | BZX79C2V4 |
| 6308 | 5322 130 30684 | 1N4002 |
| 6309 | 5322 130 30684 | 1N4002 |
| 6310 | 5322 130 30684 | 1N4002 |
| 6311 | 4822 130 80305 | KBU4D |
| 6312 | 4822 130 82289 | KBU6DL-7002 |
| 6401 | 4822 130 34167 | BZX79C6V2 |
| 6402 | 4822 130 30621 | 1N4148 |
| 6403 | 4822 130 30621 | 1N4148 |
| 6404 | 4822 130 30621 | 1N4148 |
| 6405 | 4822 130 32574 | 1SS106 |
| 6406 | 4822 130 32574 | 1SS106 |
| 6415 | 4822 130 30621 | 1N4148 |
| 6417 | 4822 130 30621 | 1N4148 |
| 6420 | 4822 130 81254 | IR GP1U520X |
| 6437 | 4822 130 82027 | TLR220 RD |
| 6438 | 4822 130 32472 | TLG124A GN |
| 6439 | 4822 130 32472 | TLG124A GN |
| 6470 | 4822 130 34197 | BZX79C12V |
| 6471 | 4822 130 34167 | BZX79C6V2 |
| 6472 | 4822 130 30621 | 1N4148 |
| 6481 | 4822 130 30621 | 1N4148 |
| 6482 | 4822 130 30621 | 1N4148 |
| 6535 | 4822 130 34173 | BZX79C5V6 |
| 6536 | 4822 130 34173 | BZX79C5V6 |
| 6537 | 4822 130 31253 | BZX79C2V4 |
| 6551 | 4822 130 30621 | 1N4148 |
| 6552 | 4822 130 30621 | 1N4148 |
| 6553 | 4822 130 30621 | 1N4148 |
| 6554 | 4822 130 30621 | 1N4148 |
| 6555 | 4822 130 30621 | 1N4148 |
| 6556 | 4822 130 30621 | 1N4148 |
| 6557 | 4822 130 30621 | 1N4148 |
| 6558 | 4822 130 30621 | 1N4148 |
| 6559 | 4822 130 30621 | 1N4148 |
| 6560 | 4822 130 30621 | 1N4148 |
| 6561 | 4822 130 30621 | 1N4148 |
| 6562 | 4822 130 30621 | 1N4148 |
| 6563 | 4822 130 30621 | 1N4148 |
| 6564 | 4822 130 30621 | 1N4148 |
| 6565 | 4822 130 30621 | 1N4148 |
| 6566 | 4822 130 30621 | 1N4148 |
| 6568 | 4822 130 30621 | 1N4148 |
| 6706 | 4822 130 30621 | 1N4148 |
| 6707 | 4822 130 30621 | 1N4148 |
| 6708 | 4822 130 30621 | 1N4148 |
| 6710 | 4822 130 30621 | 1N4148 |
| 6711 | 4822 130 30621 | 1N4148 |
| 6712 | 4822 130 30621 | 1N4148 |
| 6731 | 4822 130 31253 | BZX79-C2V4 |
| 6732 | 4822 130 30842 | BAV21 |
| 6810 | 4822 130 30621 | 1N4148 |
| 6811 | 4822 130 30621 | 1N4148 |
| 6812 | 4822 130 30621 | 1N4148 |
| 6813 | 4822 130 30621 | 1N4148 |
| 6814 | 4822 130 30621 | 1N4148 |
| 6840 | 4822 130 30621 | 1N4148 |
| 6841 | 4822 130 30621 | 1N4148 |
| 6842 | 4822 130 30621 | 1N4148 |
| 6843 | 4822 130 30621 | 1N4148 |
| 6850 | 4822 130 30621 | 1N4148 |
| 6851 | 4822 130 30621 | 1N4148 |
| 6852 | 4822 130 30621 | 1N4148 |
| 6853 | 4822 130 30621 | 1N4148 |
| 6870 | 4822 130 34233 | BZX79C5V1 |
| 6900 | 4822 130 30621 | 1N4148 |
| 6901 | 4822 130 30621 | 1N4148 |
| 6902 | 4822 130 30621 | 1N4148 |
| 6903 | 4822 130 30621 | 1N4148 |
| 6904 | 4822 130 30621 | 1N4148 |
| 6905 | 4822 130 30621 | 1N4148 |
| 6906 | 4822 130 30621 | 1N4148 |
| 6907 | 4822 130 30621 | 1N4148 |
| 7101 | 4822 130 60163 | 2SC1047 |
| 7102 | 4822 130 60163 | 2SC1047 |
| 7103 | 4822 130 44196 | BC548C |
| 7104 | 4822 130 44196 | BC548C |
| 7105 | 5322 130 60068 | BC558C |
| 7106 | 4822 130 60163 | 2SC1047 |
| 7107 | 4822 130 60163 | 2SC1047 |
| 7108♠ | 4822 130 60163 | 2SC1047 |
| 7109♠ | 5322 130 44779 | BC338-40 |
| 7110♠ | 4822 130 44196 | BC548C |
| 7112♠ | 4822 130 60163 | 2SC1047 |
| 7113♠ | 4822 130 44196 | BC548C |
| 7114 | 4822 130 44196 | BC548C |
| 7115 | 4822 130 44196 | BC548C |
| 7116 | 4822 209 71331 | LM7000 |
| 7117 | 4822 209 73851 | CXA1238M |
| 7118 | 4822 130 60163 | 2SC1047 |
| 7119 | 5322 130 41982 | BC848B |
| 7120 | 5322 130 41982 | BC848B |
| 7253 | 4822 209 73356 | △ AN7161N(FP) |
| 7254 | 4822 209 73356 | △ AN7161N(FP) |

| | | | |
|---|---|---|---|
| 7256 | 4822 130 44196 | | TBC548C |
| 7301 | 4822 209 80591 | △ | LM317T |
| 7303 | 4822 209 63822 | △ | LM2940-10V |
| 7304 | 4822 130 40937 | | TBC548B |
| 7305 | 4822 130 41344 | | BC337-40 |
| 7306 | 4822 130 44196 | | TBC548C |
| 7307 | 4822 209 73356 | | AN7161N(FP) |
| 7308 | 4822 209 83274 | | NJM4560D |
| 7400 | 4822 209 63882 | | TMP47C620 |
| 7401 | 5322 130 44779 | | BC338-40 |
| 7402 | 4822 130 40937 | | TBC548B |
| 7403 | 4822 130 40937 | | TBC548B |
| 7404 | 4822 130 40937 | | TBC548B |
| 7405 | 4822 130 40937 | | TBC548B |
| 7406 | 4822 130 40937 | | TBC548B |
| 7407 | 4822 130 44197 | | TBC558B |
| 7408 | 4822 130 40937 | | TBC548B |
| 7409 | 4822 130 40937 | | TBC548B |
| 7410 | 4822 130 41327 | | BC327-40 |
| 7411 | 4822 130 44197 | | TBC558B |
| 7412 | 4822 130 61236 | △ | BD234 |
| 7414 | 4822 130 40938 | | TBC548 |
| 7416 | 4822 130 40937 | | TBC548B |
| 7419 | 4822 130 61236 | △ | BD234 |
| 7420 | 4822 130 40937 | | TBC548B |
| 7421 | 4822 130 40937 | | TBC548B |
| 7443 | 4822 130 40937 | | TBC548B |
| 7444 | 4822 130 40937 | | TBC548B |
| 7447 | 4822 130 44197 | | TBC558B |
| 7450 | 4822 130 40937 | | TBC548B |
| 7451 | 4822 130 40937 | | TBC548B |
| 7452 | 4822 130 40937 | | TBC548B |
| 7501 | 4822 209 83274 | | NJM4560D |
| 7502 | 5322 130 44779 | | BC338-40 |
| 7503 | 5322 130 44779 | | BC338-40 |
| 7504 | 4822 130 41715 | | BC328-40 |
| 7505 | 4822 130 41715 | | BC328-40 |
| 7506 | 4822 130 40937 | | TBC548B |
| 7507 | 4822 130 40937 | | TBC548B |
| 7515 | 4822 130 44196 | | TBC548C |
| 7516 | 4822 130 44196 | | TBC548C |
| 7550 | 4822 209 83274 | | NJM4560D |
| 7551 | 4822 130 44196 | | TBC548C |
| 7551 | 4822 209 63558 | | CXA1102P |

| | | |
|---|---|---|
| 7552 | 4822 130 40937 | BC548B |
| 7552 | 4822 130 44196 | TBC548C |
| 7553 | 4822 130 44196 | TBC548C |
| 7554 | 5322 130 44779 | BC338-40 |
| 7555 | 5322 130 44779 | BC338-40 |
| 7556 | 4822 209 83274 | NJM4560D |
| 7600 | 5322 209 72487 | LM2940CT-5V |
| 7701 | 4822 209 62372 | TDA1602A/N3 |
| 7704 | 4822 130 40937 | BC548B |
| 7705 | 4822 130 40937 | BC548B |
| 7707 | 4822 130 44197 | BC558B |
| 7801 | 4822 130 40981 | BC337-25 |
| 7810 | 4822 209 73234 | TDA8808T/C3 |
| 7830 | 4822 209 73235 | TDA8809T/C2 |
| 7831 | 4822 209 70705 | L272mH |
| 7832 | 4822 209 70705 | L272mH |
| 7840 | 4822 209 62493 | INS8050-11-QRY |
| 7841 | 5322 209 11331 | PC74HC02P |
| 7850 | 4822 209 62112 | M50423FP |
| 7851 | 4822 209 70422 | MN4264-15 |
| 7852 | 4822 209 63885 | TDA43A/M2/S2 |
| 7853 | 4822 130 41344 | BC337-40 |
| 7854 | 4822 130 41327 | BC327-40 |
| 7855 | 4822 130 41344 | BC337-40 |
| 7856 | 4822 130 41327 | BC327-40 |
| 7870 | 4822 209 83274 | NJM4560D |
| 7871 | 4822 130 40938 | TBC548 |
| 7872 | 4822 130 40938 | TBC548 |
| 7873 | 4822 130 40938 | TBC548 |
| 7874 | 4822 130 40938 | TBC548 |
| 7875 | 4822 130 40941 | TBC558 |
| 7876 | 4822 130 40938 | TBC548 |
| 7877 | 4822 130 40938 | TBC548 |
| 7878 | 4822 130 41344 | BC337-40 |
| 7879 | 4822 130 41327 | BC327-40 |
| 7880 | 4822 130 44196 | TBC548C |
| 7900 | 4822 209 62111 | COP472-3 |
| 7901 | 4822 209 62111 | COP472-3 |
| 7901 | 4822 130 44196 | TBC548C |
| 7902 | 4822 130 41327 | BC327-40 |
| 7902 | 4822 209 62113 | PC74HCT164T |
| 7903 | 4822 130 41327 | BC327-40 |
| 7904 | 4822 130 41344 | BC337-40 |
| 7905 | 4822 130 41344 | BC337-40 |

| | |
|---|---|
| # | For -/21 only |
| ♣ | For -/30 only |
| @ | For -/37 only |
| ♠ | For -/20/25 only |
| ♦ | For -/21/37 only |
| α | For -/20/25/30 only |
| * | Not for -/37 only |
| δ | Not for -/00/25 only |

**GB**

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

**F**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

**NL**

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

**D**

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

**I**

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

**"After servicing and before returning set to customer perform a leakage current or resistive measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5 mA".**

4384

# Service Information

1991 - 05 - 03

FW2012 families

A92 - 142

## Product Service Group CE Audio

**During production the following changes are made:**

FW2012 family
From week 215 onwards a **new circuitry has been introduced to allow the openning and closing of CD door** during other mode. Therefore the following changes are made:

Delete 2903
3911 - 3916
3921
7902 - 7905.

Add 6854/6918 1N4148 4822 130 30621
A new CDD board.

(All drawings are enclosed)

To reduce the awake buzzer volume by changing capacitor 2441 from 300pF to 100pF. The the awake tuner volume is controlled by software that cannot be changed.

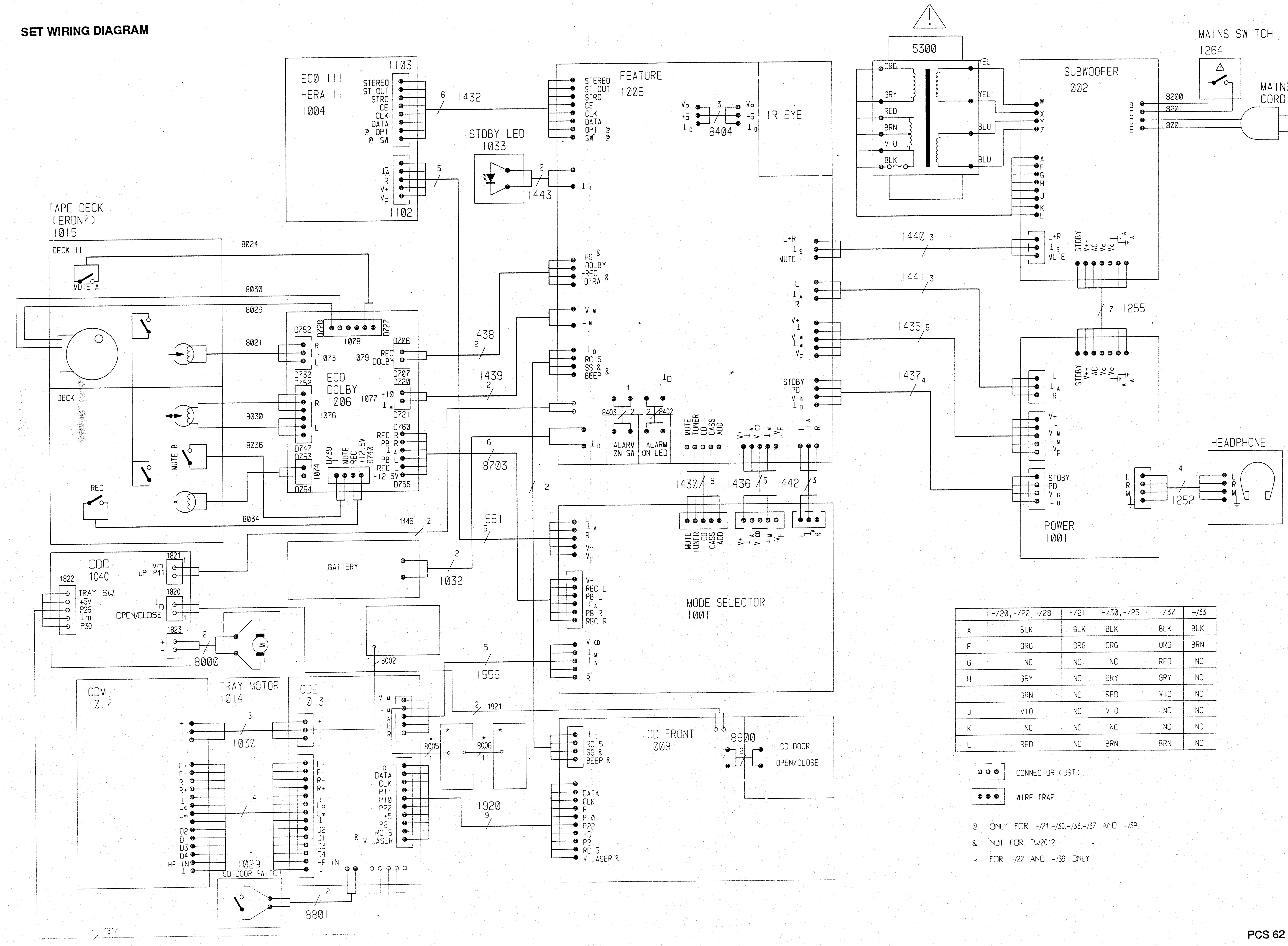
FW2012/33
Due to **Korean requirement** the following changes are made:
Pos 448 is 4822 426 51568
443 4822 444 60852
416 4822 413 70282
414 4822 450 61934
486 4822 426 20217
Remote control is 4822 218 10475

**Correction of errors:**

FW2012/39
Pos 486 is change from 4822 426 20204 to 4822 426 20216.

Service
Service
Service

## SET WIRING DIAGRAM


ECO III
HERA II
1004
1103
STEREO
ST OUT
STRQ
CE
CLK
DATA
@ OPT
@ SW
1102
6 1432
5
STDBY LED
1033
2
1443
FEATURE
1005
IR EYE
Vo
+5
3
8404
5300
ORG
GRY
RED
BRN
VIO
BLK
YEL
BLU
SUBWOOFER
1002
W
X
Y
Z
MAINS SWITCH
1264
8200
8201
8001
MAINS CORD
TAPE DECK
(ERDN7)
1015
DECK II
MUTE A
DECK I
MUTE B
REC
8024
8030
8029
8021
8036
8034
ECO
DOLBY
1006
1078
1073
1079
1076
1077
1074
REC
DOLBY
MUTE
REC
+12.5V
PB
1438
1439
6
8703
HS &
DOLBY
+REC
D RA &
V M
RC 5
SS &
BEEP &
ALARM
ON SW
ALARM
ON LED
8403
8402
MUTE
TUNER
CD
CASS
ADD
L+R
MUTE
STDBY
PD
1440 3
1441 3
1435 5
1437 4
7 1255
1430 5
1436 5
1442 3
STDBY
V++
AC
Vc
POWER
1001
HEADPHONE
4
1252
1446 2
1551
5
BATTERY
2
1032
CDD
1040
1822
1821
1820
1823
TRAY SW
+5V
P26
P30
Vm
uP P11
OPEN/CLOSE
2
8000
TRAY MOTOR
1014
MODE SELECTOR
1001
V CD
5
1556
1 8002
2 1921
CDM
1017
3
1032
CDE
1013
F+
F-
R-
R+
D2
D1
D3
D4
HF IN
DATA
CLK
P11
P10
P22
+5
P21
RC 5
& V LASER
8005
8006
1920
9
CD FRONT
1009
8900
CD DOOR
OPEN/CLOSE
1029
CD DOOR SWITCH
2
8801
1917

|  | -/20, -/22, -/28 | -/21 | -/30, -/25 | -/37 | -/33 |
|---|---|---|---|---|---|
| A | BLK | BLK | BLK | BLK | BLK |
| F | ORG | ORG | ORG | ORG | BRN |
| G | NC | NC | NC | RED | NC |
| H | GRY | NC | GRY | GRY | NC |
| I | BRN | NC | RED | VIO | NC |
| J | VIO | NC | VIO | NC | NC |
| K | NC | NC | NC | NC | NC |
| L | RED | NC | BRN | BRN | NC |

●●● CONNECTOR (JST)

●●● WIRE TRAP

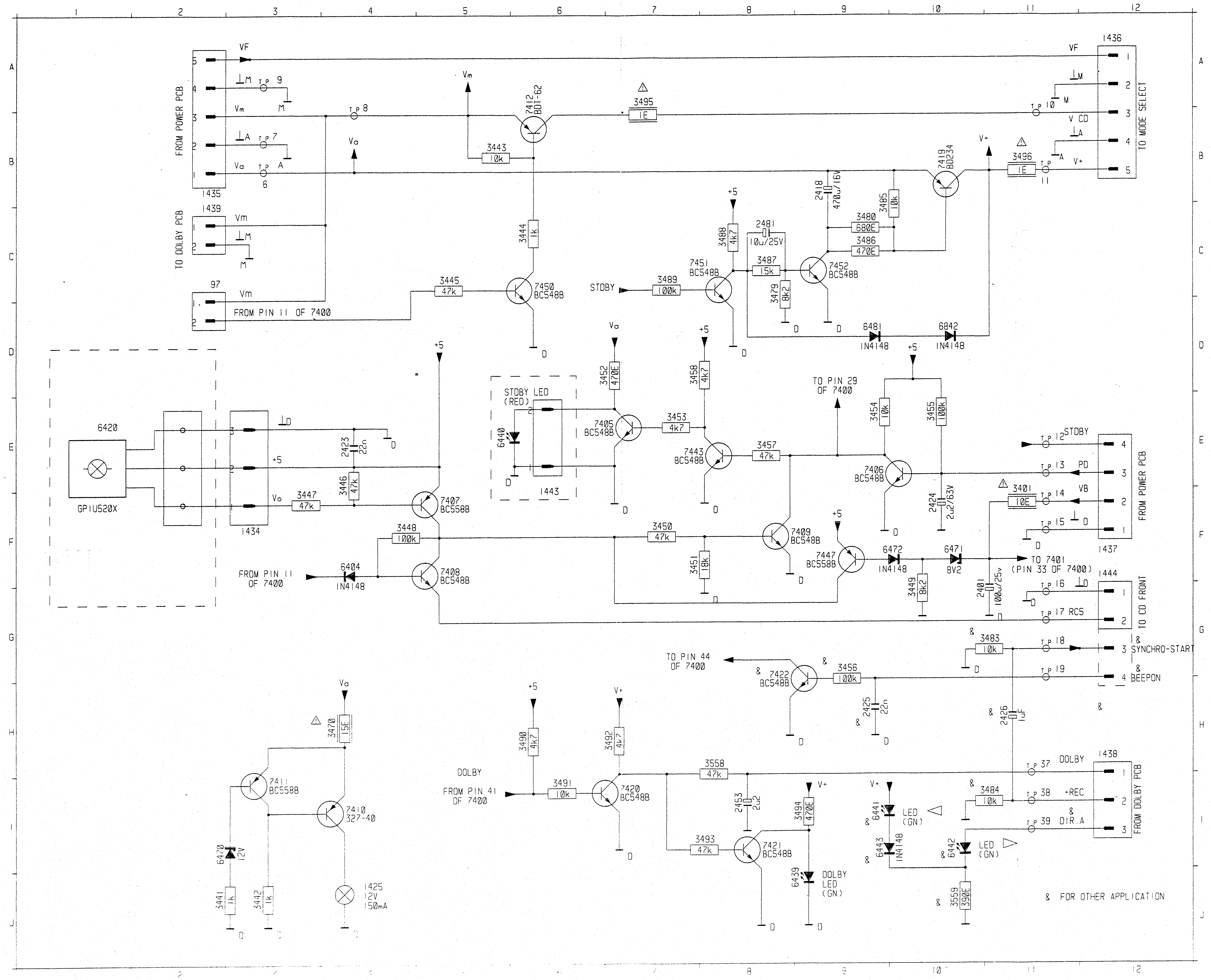
@ ONLY FOR -/21.-/30.-/33.-/37 AND -/39

& NOT FOR FW2012

* FOR -/22 AND -/39 ONLY

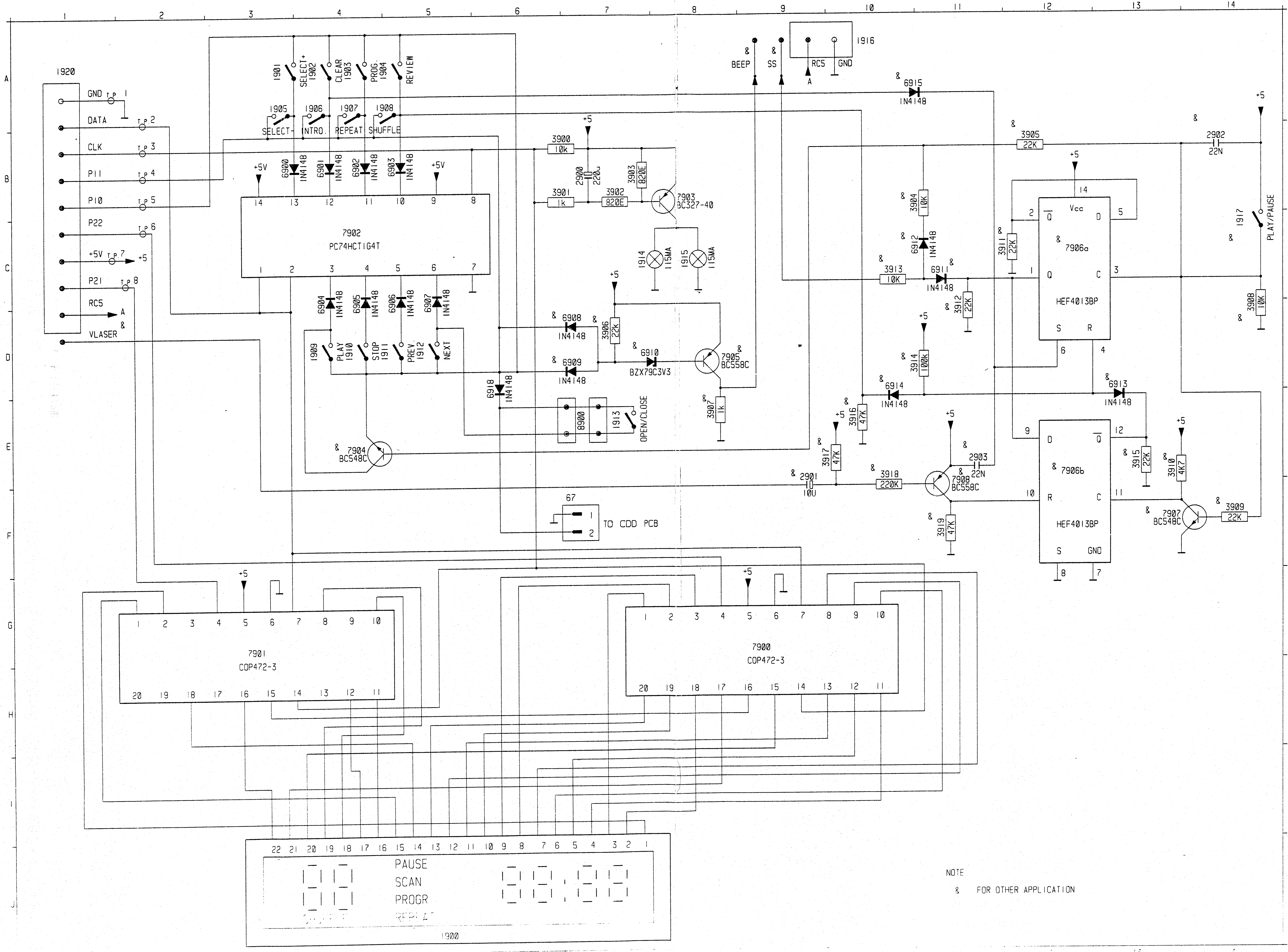
PCS 62 595

## FEATURE CIRCUIT III


1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J
FROM POWER PCB
1435
VF
⊥M TP 9
M
Vm
TP 8
⊥A TP 7
A
Va TP 6
Vm
Va
7412 BDT-62
3443 10k
3444 1k
3495 1E
1436
TO MODE SELECT
⊥M
TP 10 M
V CD
⊥A
A
V+
TP 11
3496 1E
7419 BD234
2418 470u/16V
3485 10k
3480 680E
3486 470E
7452 BC548B
2481 10u/25V
3487 15k
3479 8k2
+5
3488 4k7
7451 BC548B
STDBY
3489 100k
6481 1N4148
6842 1N4148
TO DOLBY PCB
1439
Vm
⊥M
M
97
Vm
FROM PIN 11 OF 7400
3445 47k
7450 BC548B
6420
GP1U520X
1434
⊥D
+5
Vo
2423 22n
3446 47k
3447 47k
7407 BC558B
3448 100k
7408 BC548B
FROM PIN 11 OF 7400
6404 1N4148
STDBY LED (RED)
6440
1443
3452 470E
7405 BC548B
3453 4k7
3458 4k7
7443 BC548B
3457 47k
TO PIN 29 OF 7400
3454 10k
3455 100k
7406 BC548B
2424 2u2/63V
3450 47k
3451 18k
7409 BC548B
7447 BC558B
6472 1N4148
6471 8V2
3449 8k2
2401 100u/25V
TO 7401 (PIN 33 OF 7400)
TP 12 STDBY
TP 13 PD
TP 14 VB
3401 10E
TP 15 ⊥D
FROM POWER PCB
1437
1444
TO CD FRONT
TP 16 ⊥D
TP 17 RC5
3483 10k
TP 18
3 SYNCHRO-START
TP 19
4 BEEPON
TO PIN 44 OF 7400
7422 BC548B
3456 100k
2425 22n
2426 1uF
Va
3470 15E
7411 BC558B
7410 327-40
6470 12V
3441 1k
3442 1k
1425 12V 150mA
DOLBY
FROM PIN 41 OF 7400
3490 4k7
3491 10k
3492 4k7
7420 BC548B
3558 47k
2453 2u2
3494 470E
3493 47k
7421 BC548B
6439 DOLBY LED (GN)
TP 37 DOLBY
TP 38 +REC
TP 39 DIR.A
1438
FROM DOLBY PCB
3484 10k
6441 LED (GN)
6443 1N4148
6442 LED (GN)
3559 390E
& FOR OTHER APPLICATION

| | |
|---|---|
| 97 | C 2 |
| 1434 | F 2 |
| 1435 | B 2 |
| 1436 | A12 |
| 1437 | F12 |
| 1438 | H12 |
| 1439 | C 2 |
| 1443 | E 6 |
| 1444 | F12 |
| 2401 | G10 |
| 2418 | B 9 |
| 2423 | E 4 |
| 2424 | F10 |
| 2425 | H 9 |
| 2426 | H11 |
| 2453 | I 8 |
| 2481 | C 8 |
| 3401 | F11 |
| 3441 | J 2 |
| 3442 | J 3 |
| 3443 | B 5 |
| 3444 | C 6 |
| 3445 | C 5 |
| 3446 | E 4 |
| 3447 | F 3 |
| 3448 | F 4 |
| 3449 | G10 |
| 3450 | F 7 |
| 3451 | F 7 |
| 3452 | D 7 |
| 3453 | E 7 |
| 3454 | E 9 |
| 3455 | E10 |
| 3456 | G 9 |
| 3457 | E 8 |
| 3458 | D 7 |
| 3470 | H 4 |
| 3479 | C 8 |
| 3480 | C 9 |
| 3483 | G11 |
| 3484 | I11 |
| 3485 | B 9 |
| 3486 | C 9 |
| 3487 | C 8 |
| 3488 | C 8 |
| 3489 | C 7 |
| 3490 | H 6 |
| 3491 | I 6 |
| 3492 | H 7 |
| 3493 | I 8 |
| 3494 | I 9 |
| 3495 | A 7 |
| 3496 | B11 |
| 3558 | H 8 |
| 3559 | J10 |
| 6404 | F 4 |
| 6420 | E 1 |
| 6439 | J 9 |
| 6440 | E 5 |
| 6441 | I 9 |
| 6442 | I10 |
| 6443 | I 9 |
| 6470 | I 2 |
| 6471 | F10 |
| 6472 | F10 |
| 6481 | D 9 |
| 6482 | D10 |
| 7405 | E 7 |
| 7406 | E 9 |
| 7407 | F 5 |
| 7408 | F 5 |
| 7409 | F 8 |
| 7410 | I 4 |
| 7411 | I 3 |
| 7412 | B 6 |
| 7419 | B10 |
| 7420 | I 7 |
| 7421 | I 8 |
| 7422 | G 8 |
| 7443 | E 8 |
| 7447 | F 9 |
| 7450 | C 6 |
| 7451 | C 8 |
| 7452 | C 9 |

## CD FRONT CIRCUIT


1920
GND
DATA
CLK
P11
P10
P22
+5V
P21
RC5
VLASER
TP 1
TP 2
TP 3
TP 4
TP 5
TP 6
TP 7
TP 8
1901 SELECT+
1902 CLEAR
1903 PROG
1904 REVIEW
1905 SELECT-
1906 INTRO.
1907 REPEAT
1908 SHUFFLE
1909 PLAY
1910 STOP
1911 PREV
1912 NEXT
6900 IN4148
6901 IN4148
6902 IN4148
6903 IN4148
6904 IN4148
6905 IN4148
6906 IN4148
6907 IN4148
7902
PC74HCT164T
+5V
3900 10k
3901 1k
3902 820E
3903 820E
2900 220U
7903 BC327-40
1914 115MA
1915 115MA
6908 IN4148
6909 IN4148
6910 BZX79C3V3
3906 22k
7905 BC558C
3907 1k
6918 IN4148
8900
1913 OPEN/CLOSE
7904 BC548C
67
TO CDD PCB
BEEP
SS
1916
RC5
GND
6915 IN4148
3905 22K
2902 22N
+5
3904 10K
6912 IN4148
3913 10K
6911 IN4148
3912 22K
3911 22K
3914 100k
6914 IN4148
6913 IN4148
3916 47K
3917 47K
2901 10U
3918 220K
7908 BC558C
2903 22N
3919 47K
7906a
HEF4013BP
Vcc
Q
D
C
S
R
7906b
HEF4013BP
GND
3915 22K
3910 4K7
7907 BC548C
3909 22K
1917 PLAY/PAUSE
3908 10K
7901
COP472-3
7900
COP472-3
PAUSE
SCAN
PROGR
REPEAT
1900
NOTE
& FOR OTHER APPLICATION

| | |
|---|---|
| 67 | F 7 |
| 1900 | J 5 |
| 1901 | A 3 |
| 1902 | A 4 |
| 1903 | A 4 |
| 1904 | A 5 |
| 1905 | A 3 |
| 1906 | A 4 |
| 1907 | A 4 |
| 1908 | A 5 |
| 1909 | D 4 |
| 1910 | D 4 |
| 1911 | D 5 |
| 1912 | D 5 |
| 1913 | E 7 |
| 1914 | C 7 |
| 1915 | C 8 |
| 1916 | 9 |
| 1917 | C14 |
| 1920 | A 1 |
| 2900 | B 7 |
| 2901 | E 9 |
| 2902 | B14 |
| 2903 | E11 |
| 3900 | B 7 |
| 3901 | B 7 |
| 3902 | B 7 |
| 3903 | B 7 |
| 3904 | B11 |
| 3905 | B12 |
| 3906 | D 7 |
| 3907 | E 8 |
| 3908 | D14 |
| 3909 | F14 |
| 3910 | E13 |
| 3911 | C12 |
| 3912 | D11 |
| 3913 | C10 |
| 3914 | D11 |
| 3915 | E13 |
| 3916 | E10 |
| 3917 | E10 |
| 3918 | E10 |
| 3919 | F11 |
| 6900 | B 3 |
| 6901 | B 4 |
| 6902 | B 4 |
| 6903 | B 5 |
| 6904 | C 4 |
| 6905 | C 4 |
| 6906 | C 5 |
| 6907 | C 5 |
| 6908 | D 7 |
| 6909 | D 7 |
| 6910 | D 7 |
| 6911 | C11 |
| 6912 | C11 |
| 6913 | D13 |
| 6914 | D10 |
| 6915 | A10 |
| 6918 | D 6 |
| 7900 | G 9 |
| 7901 | G 3 |
| 7902 | C 4 |
| 7903 | B 8 |
| 7904 | E 4 |
| 7905 | D 8 |
| 7906a | C12 |
| 7906b | E12 |
| 7907 | F13 |
| 7908 | F11 |
| 8900 | E 7 |

# FEATURE BOARD

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| 080 | L21 | 1404 | M4 | | | 2408 | H13 | 2451 | D7 | 2522 | E19 | 3408 | J16 | 3430 | H10 | 3450 | K22 | 3471 | E7 | 3491 | C8 | 3513 | E20 | 3536 | E19 | 5401 | J14 | 6470 | M18 | 7419 | G5 | | | 9422 | G13 | 9443 | D10 | 9465 | B21 | 9486 | C12 | 8404 | L23 |
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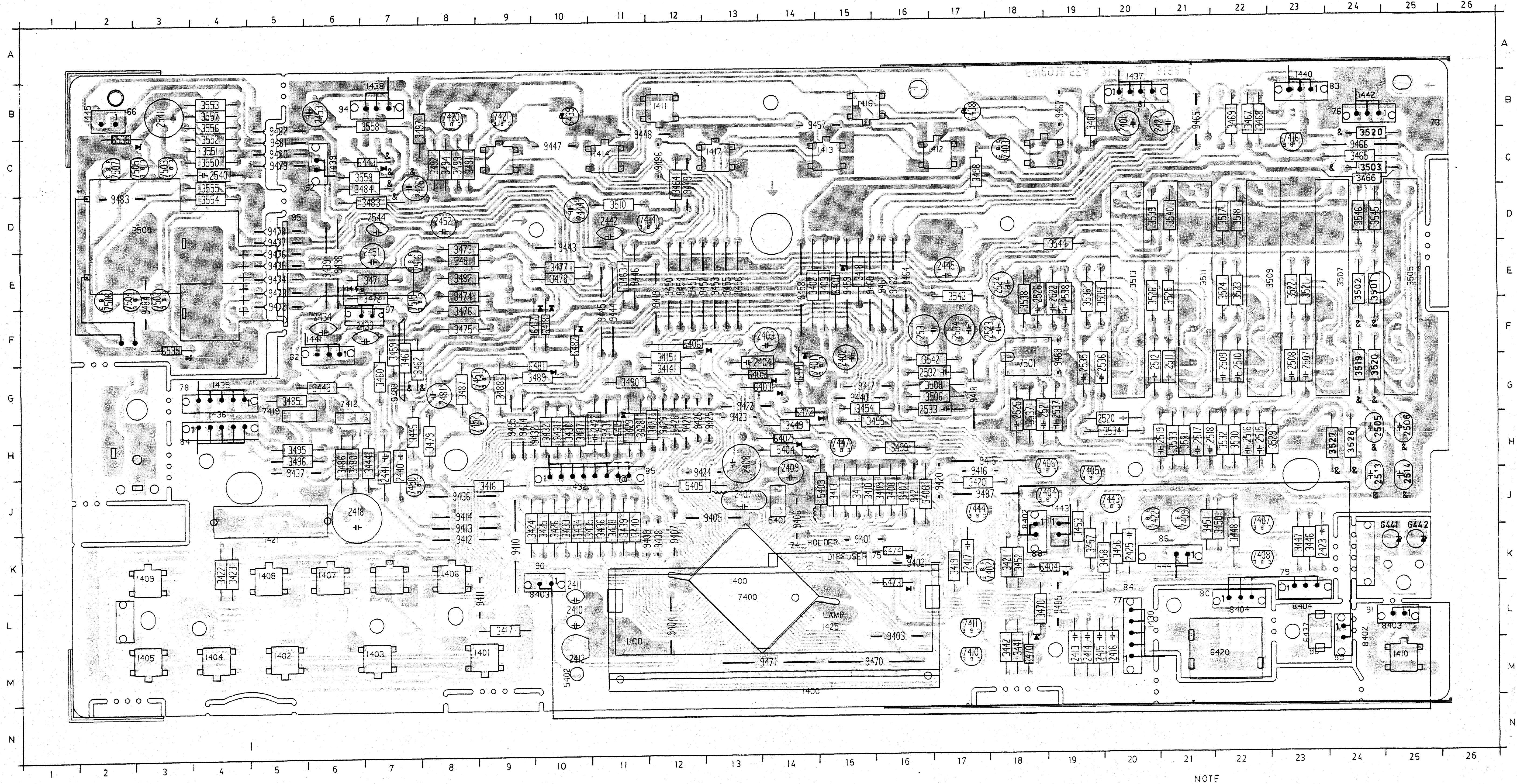
| 091 | L24 | 1416 | B15 | 1442 | B24 | 2424 | B20 | 2513 | J24 | 2537 | G19 | 3420 | J17 | 3441 | M18 | 3461 | F7 | 3482 | E8 | 3502 | E24 | 3527 | H24 | 3552 | B4 | 6406 | F12 | 7407 | J22 | 7502 | E3 | 9411 | L9 | 9433 | H8 | 9454 | E12 | 9477 | D5 | | | | |



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## CDE BOARD

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| 1812 | J11 | 2810 | E7 | 2839 | H3 | 2862 | H8 | 2881 | J16 | 3812 | D5 | 3828 | E8 | 3844 | E3 | 3860 | K12 | 3878 | F15 | 3905 | H3 | 3924 | J9 | 5862 | H16 | 7600 | C16 | 7871 | E15 | 9601 | J3 | 9816 | C12 | 9833 | K8 | 9849 | H5 | 9865 | C3 |
| 1813 | L10 | 2812 | F6 | 2840 | H2 | 2865 | F14 | 2901 | J4 | 3813 | D5 | 3829 | F2 | 3845 | E3 | 3863 | M4 | 3879 | D15 | 3906 | J3 | 3925 | J9 | 5863 | J16 | 7801 | C4 | 7872 | E15 | 9801 | G6 | 9817 | D12 | 9834 | M7 | 9850 | L4 | 9866 | C3 |
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| 2801 | E5 | 2820 | B3 | 2851 | F12 | 2872 | D12 | 3804 | C7 | 3819 | D11 | 3835 | G2 | 3852 | H9 | 3869 | D9 | 3885 | E8 | 3914 | L10 | 5853 | L13 | 6812 | J8 | 7841 | H7 | 7878 | C8 | 9807 | K14 | 9823 | G9 | 9839 | L2 | 9856 | K4 | 9873<br>70 | K2<br>H14 |
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| 2803 | C6 | 2831 | H5 | 2855 | G7 | 2874 | E13 | 3806 | E7 | 3821 | B4 | 3837 | F4 | 3853 | G13 | 3871 | D13 | 3887 | E8 | 3916 | J10 | 5855 | L8 | 6814 | H9 | 7851 | L11 | 7880 | D10 | 9809 | D16 | 9825 | C7 | 9841 | F6 | 9858 | H4 | 6854 | M5 |
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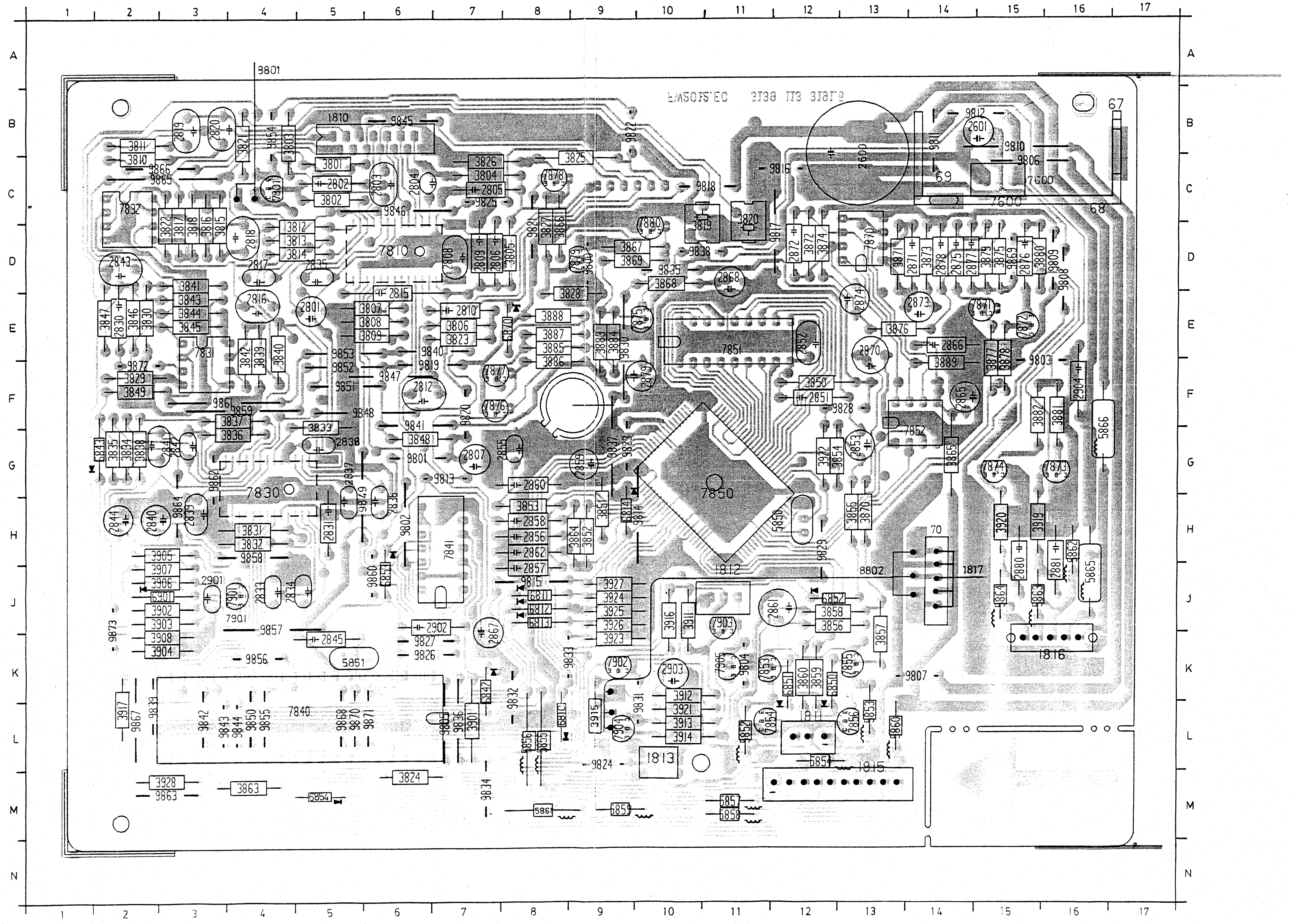

# CD FRONT BOARD

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| 1903 | B5 | 1911 | D6 | 2903 | B19 | 3907 | B8 | 3915 | D19 | 6903 | B6 | 6911 | D17 | 7903 | C16 | 9902 | D9 | 9910 | B10 | 9918 | C13 | 9926 | B15 | 9934 | D8 | 9936 | D5 |
| 1904 | B6 | 1912 | D4 | 3900 | B14 | 3908 | B18 | 3916 | D19 | 6904 | D7 | 6912 | D17 | 7904 | D9 | 9903 | D9 | 9911 | B11 | 9919 | C13 | 9927 | B19 | 9935 | D8 | 1921 | E5 |
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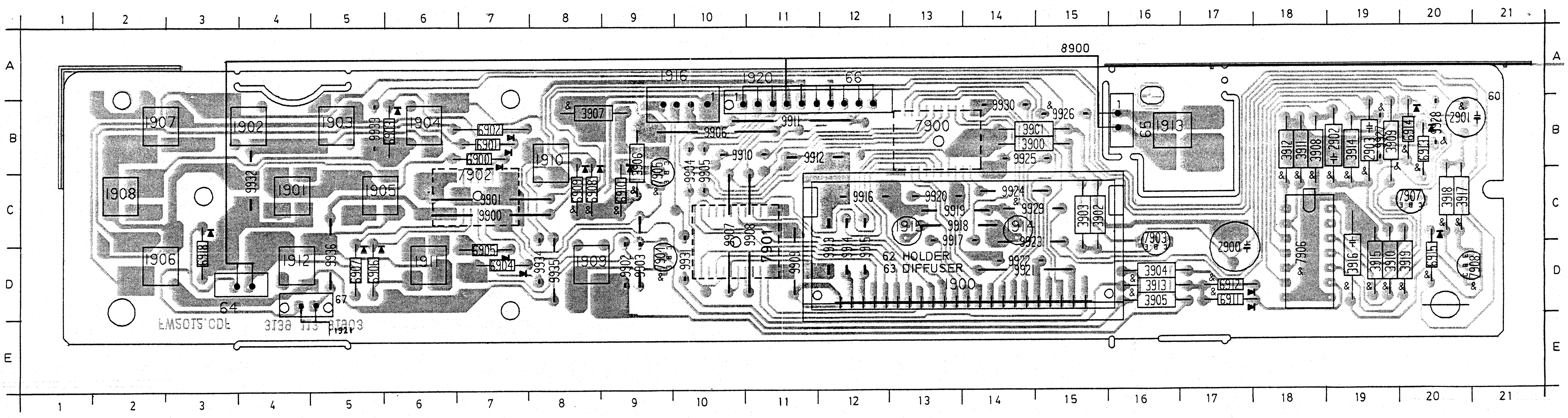

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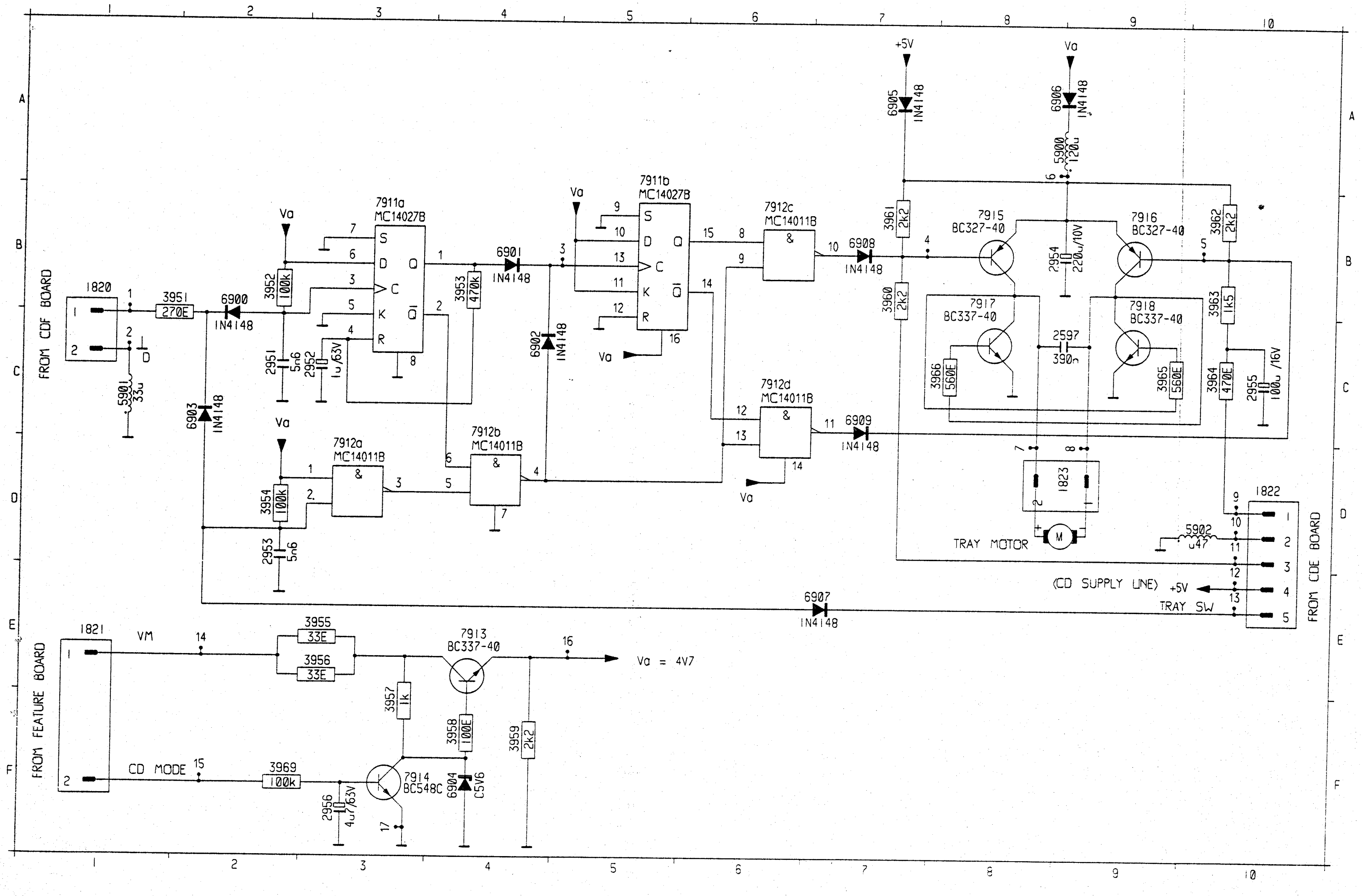
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| 1822 | C2 | 2955 | D2 | 3956 | F8 | 3963 | B5 | 5902 | C2 | 6906 | C5 | 7914 | C8 | 9902 | C7 | 99 |
| 1823 | E2 | 2956 | B6 | 3957 | F7 | 3964 | C3 | 6900 | D6 | 6907 | C7 | 7915 | F2 | 9903 | B7 | 99 |
| 2657 | F2 | 3951 | D7 | 3958 | F6 | 3965 | C3 | 6901 | E7 | 6908 | F4 | 7916 | E2 | 9904 | D5 | 99 |
| 2951 | D5 | 3952 | D5 | 3959 | E8 | 3966 | C3 | 6902 | F5 | 6909 | F4 | 7917 | C3 | 9905 | E4 | |
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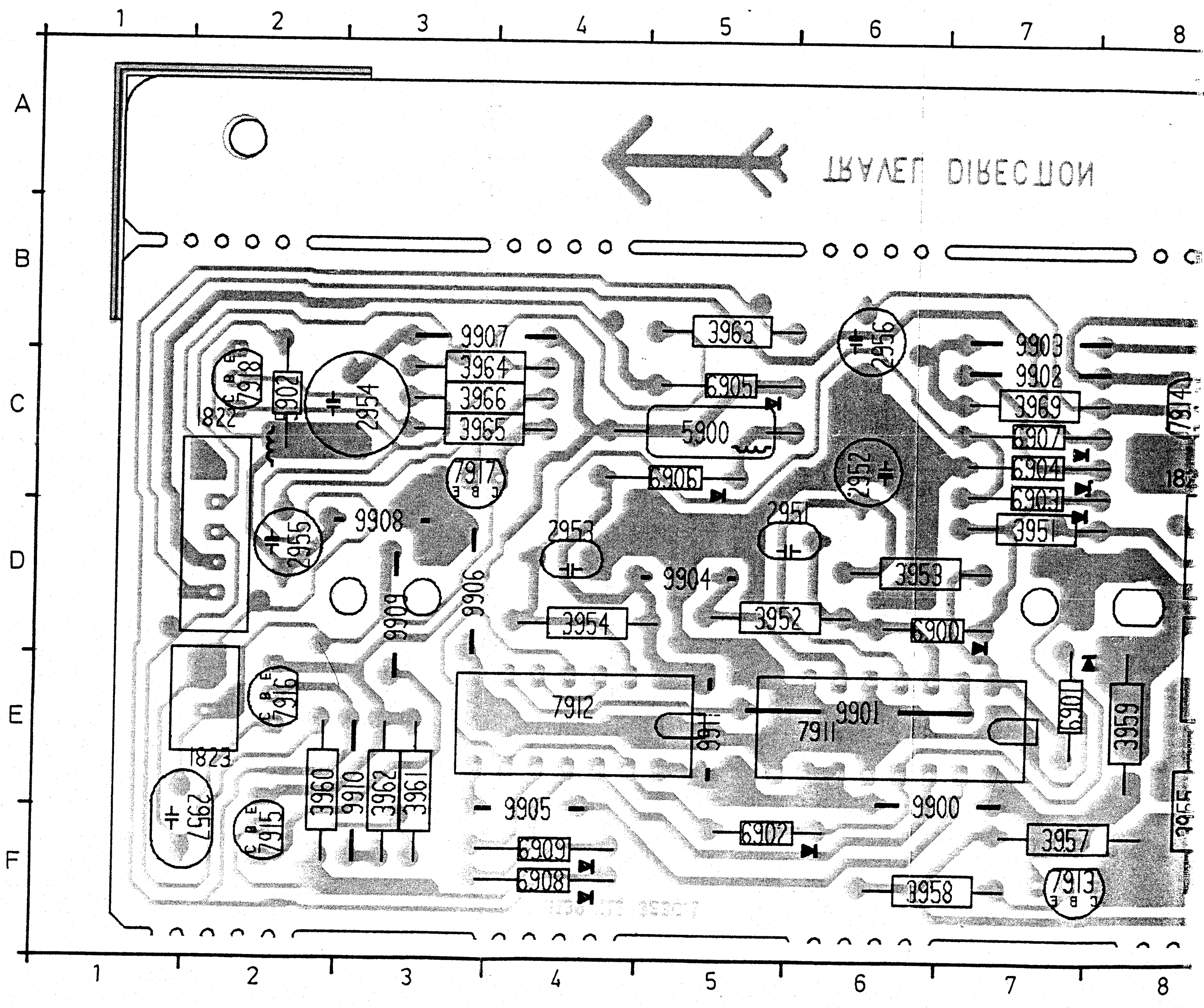
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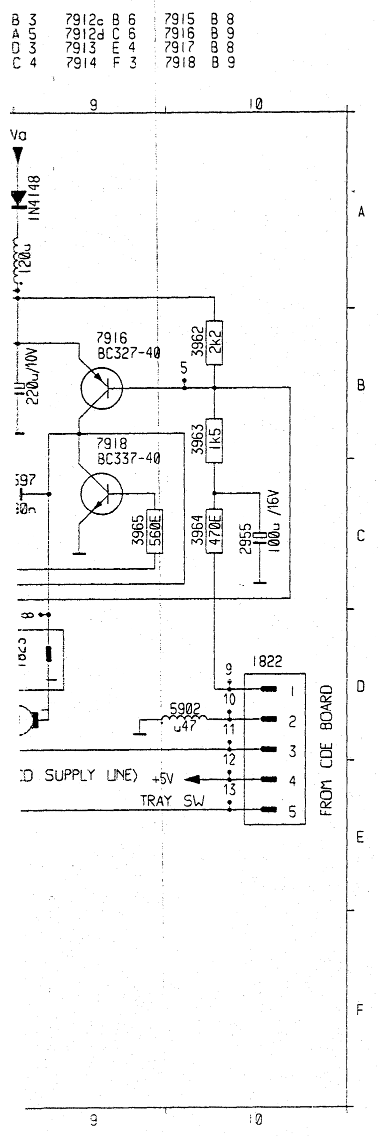
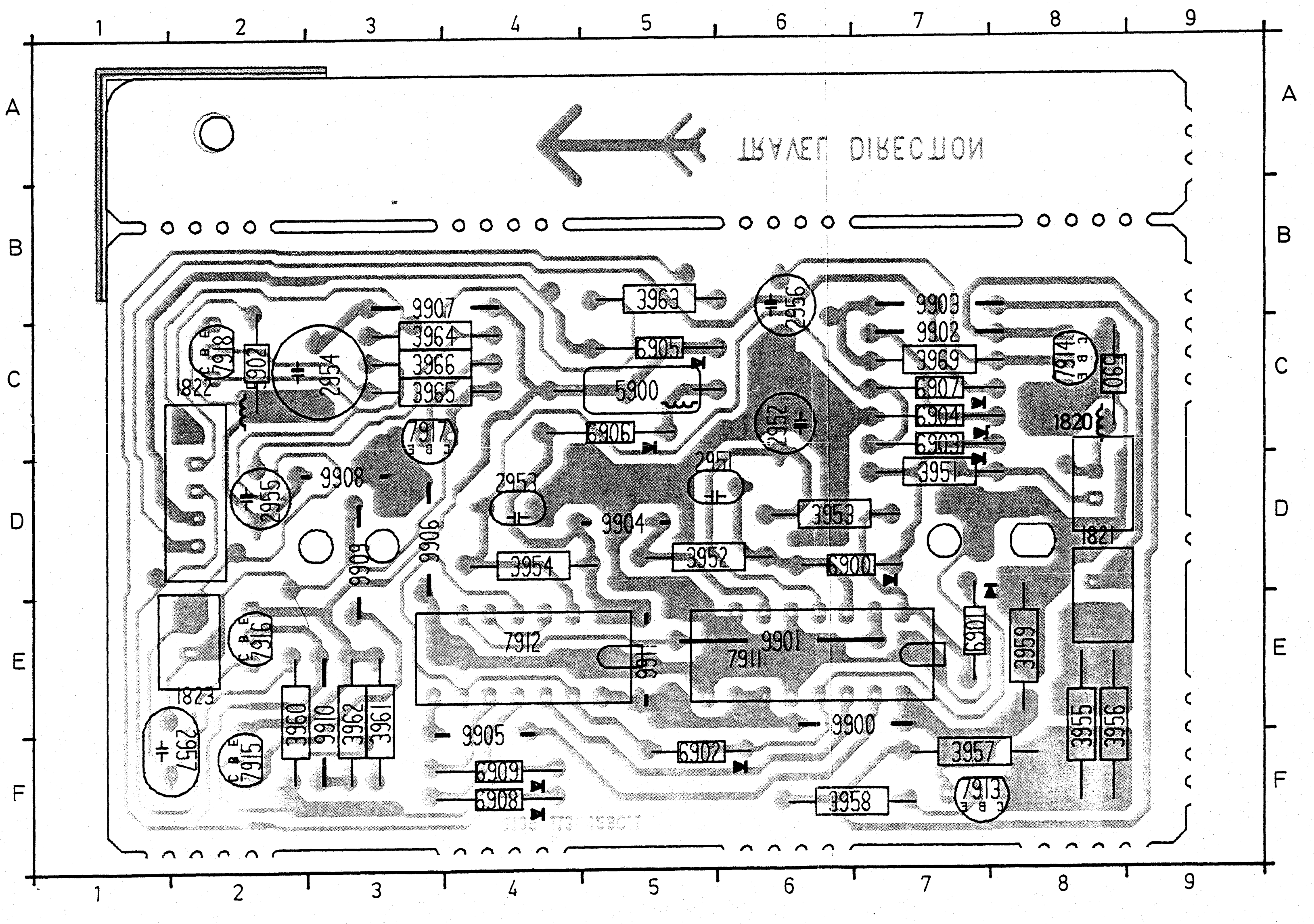

7916
BC327-40
7918
BC337-40
3962 2k2
3963 1k5
3964 470E
3965 560E
2955 100u /16V
220u/10V
1N4148
120u
1822
5902 u47
SUPPLY LINE
+5V
TRAY SW
FROM CDE BOARD
9
10
A
B
C
D
E
F

## CDD BOARD

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1820 | C8 | 2953 | D4 | 3954 | D4 | 3961 | E3 | 5900 | C5 | 6904 | C7 | 7912 | E4 | 9900 | E6 | 9907 | B3 |
| 1821 | D8 | 2954 | C3 | 3955 | F8 | 3962 | E3 | 5901 | C8 | 6905 | C5 | 7913 | F7 | 9901 | E6 | 9908 | D3 |
| 1822 | C2 | 2955 | D2 | 3956 | F8 | 3963 | B5 | 5902 | C2 | 6906 | C5 | 7914 | C8 | 9902 | C7 | 9909 | D3 |
| 1823 | E2 | 2956 | B6 | 3957 | F7 | 3964 | C3 | 6900 | D6 | 6907 | C7 | 7915 | F2 | 9903 | B7 | 9910 | E2 |
| 2657 | F2 | 3951 | D7 | 3958 | F6 | 3965 | C3 | 6901 | E7 | 6908 | F4 | 7916 | E2 | 9904 | D5 | 9911 | E5 |
| 2951 | D5 | 3952 | D5 | 3959 | E8 | 3966 | C3 | 6902 | F5 | 6909 | F4 | 7917 | C3 | 9905 | E4 | | |
| 2952 | C6 | 3953 | D6 | 3960 | E2 | 3969 | C7 | 6903 | C7 | 7911 | E6 | 7918 | C2 | 9906 | D3 | | |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TRAVEL DIRECTION
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9910

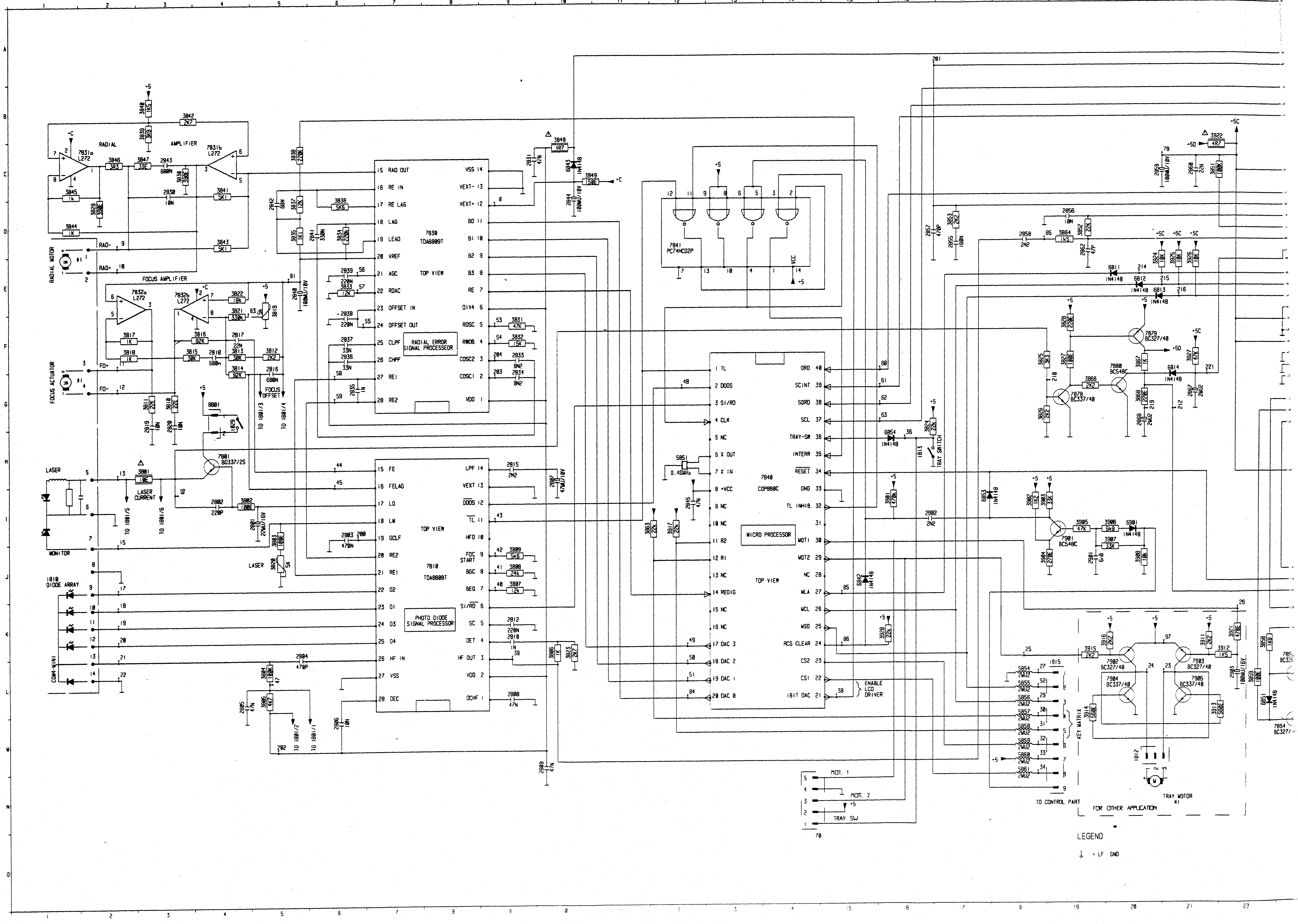
## CDD BOARD ELECTRICAL PARTLIST

| | | |
|---|---|---|
| ⊣⊢ | | |
| 2951 | 4822 121 70176 | 5.6nF 10% 50V |
| 2952 | 4822 124 41398 | 1μF 20% 63V |
| 2953 | 4822 121 70176 | 5.6nF 10% 50V |
| 2954 | 4822 124 40181 | 220μF 20% 10V |
| 2955 | 4822 124 41973 | 100μF 20% 16V |
| 2956 | 4822 124 42244 | 4.7μF 20% 63V |
| 2957 | 5322 121 42502 | 390nF 5% 63V |
| ▭ | | |
| 3951 | 4822 116 52217 | 270Ω 5% 0.5W |
| 3952 | 4822 116 52234 | 100k 5% 0.5W |
| 3953 | 4822 050 14704 | 470k 1% 0.4W |
| 3954 | 4822 116 52234 | 100k 5% 0.5W |
| 3955 | 4822 050 23309 | 33Ω 1% 0.6W |
| 3956 | 4822 050 23309 | 33Ω 1% 0.6W |
| 3957 | 4822 050 11002 | 1k 1% 0.4W |
| 3958 | 4822 050 21001 | 100Ω 1% 0.6W |
| 3959 | 4822 050 22202 | 2k2 1% 0.6W |
| 3960 | 4822 050 22202 | 2k2 1% 0.6W |
| 3961 | 4822 050 22202 | 2k2 1% 0.6W |
| 3962 | 4822 050 22202 | 2k2 1% 0.6W |
| 3963 | 4822 050 21502 | 1k5 1% 0.6W |
| 3964 | 4822 050 24701 | 470Ω 1% 0.6W |
| 3965 | 4822 050 15601 | 560Ω 1% 0.4W |
| 3966 | 4822 050 15601 | 560Ω 1% 0.4W |
| 3969 | 4822 116 52234 | 100k 5% 0.5W |
| ∿∿ | | |
| 5900 | 4822 157 53905 | 120μH |
| 5901 | 4822 152 20678 | 33μH |
| 5902 | 4822 157 61898 | 0.47μH 20% |
| ▶\| ▭ ⊗ | | |
| 6900 | 4822 130 30621 | 1N4148 |
| 6901 | 4822 130 30621 | 1N4148 |
| 6902 | 4822 130 30621 | 1N4148 |
| 6903 | 4822 130 30621 | 1N4148 |
| 6904 | 4822 130 34173 | BZX79-C5V6 |
| 6905 | 4822 130 30621 | 1N4148 |
| 6906 | 4822 130 30621 | 1N4148 |
| 6907 | 4822 130 30621 | 1N4148 |
| 6908 | 4822 130 30621 | 1N4148 |
| 6909 | 4822 130 30621 | 1N4148 |
| 7911 | 4822 209 81094 | MC14027BCP |
| 7912 | 4822 209 10247 | MC14011BCP |
| 7913 | 4822 130 41344 | BC337-40 |
| 7914 | 4822 130 44196 | BC548C |
| 7915 | 4822 130 41327 | BC327-40 |
| 7916 | 4822 130 41327 | BC327-40 |
| 7917 | 4822 130 41344 | BC337-40 |
| 7918 | 4822 130 41344 | BC337-40 |

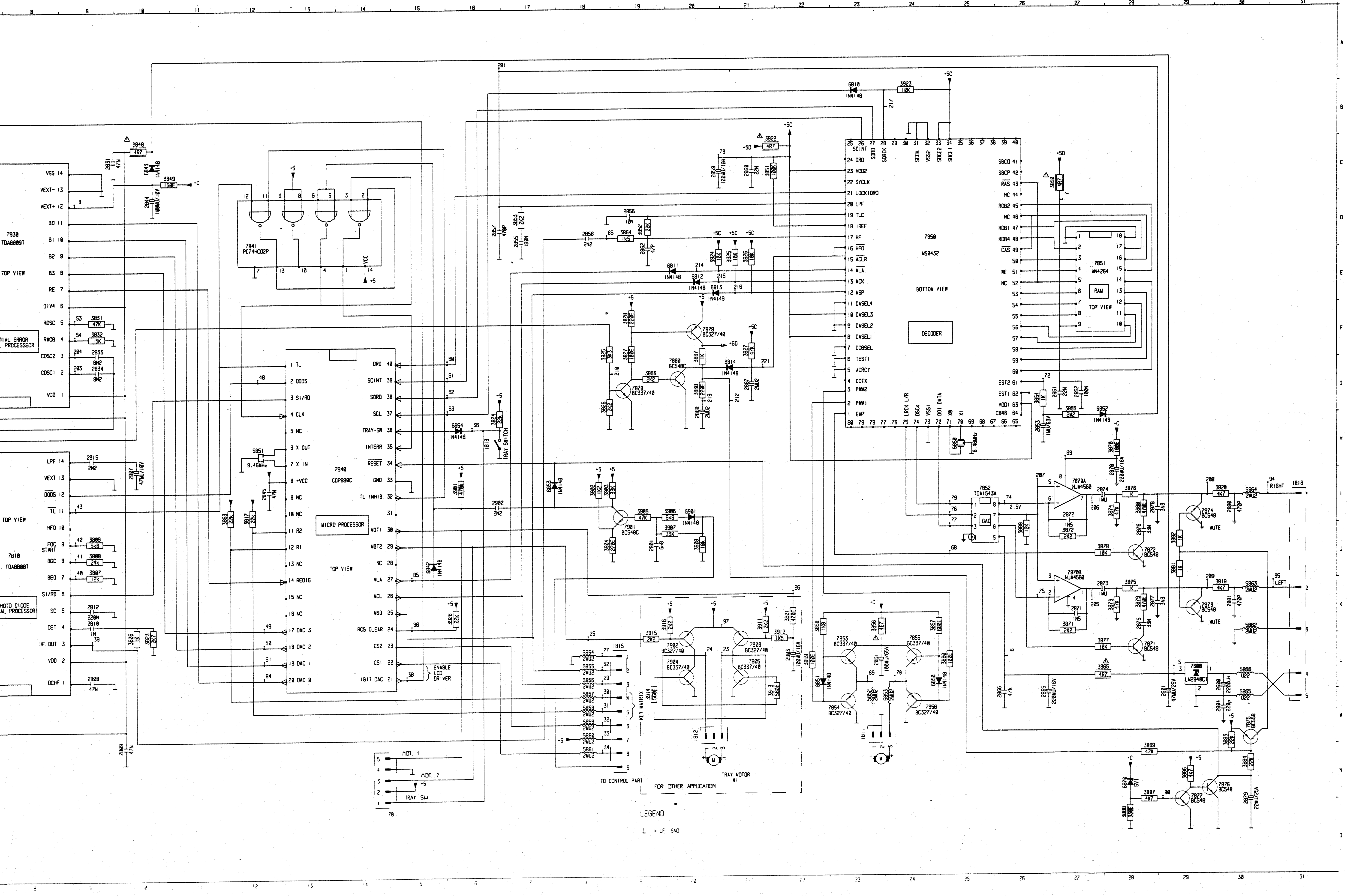
NOTE: ONLY THE MENTIONED PARTS ARE NORMAL SERVICE PARTS

# CDE CIRCUIT

| | |
|---|---|
| 70 | N14 |
| 1829 | I 3 |
| 1811 | M23 |
| 1811 | M24 |
| 1812 | M20 |
| 1812 | M20 |
| 1812 | M20 |
| 1813 | H16 |
| 1815 | L19 |
| 1815 | M19 |
| 1815 | M19 |
| 1815 | M19 |
| 1815 | M19 |
| 1815 | L19 |
| 1815 | L19 |
| 1815 | N19 |
| 1815 | N19 |
| 1816 | I31 |
| 1816 | M31 |
| 1816 | L31 |
| 1816 | K31 |
| 1816 | K31 |
| 2600 | L30 |
| 2601 | M29 |
| 2801 | I 5 |
| 2802 | I 4 |
| 2803 | I 6 |
| 2804 | K 5 |
| 2805 | L 4 |
| 2806 | M 6 |
| 2807 | H10 |
| 2808 | L 9 |
| 2809 | M10 |
| 2810 | K 9 |
| 2812 | K 9 |
| 2815 | H 9 |
| 2816 | F 5 |
| 2817 | F 4 |
| 2818 | F 4 |
| 2819 | H 3 |
| 2820 | H 3 |
| 2830 | C 3 |
| 2831 | C 9 |
| 2833 | F 9 |
| 2834 | G 9 |
| 2835 | G 6 |
| 2836 | F 6 |
| 2837 | F 6 |
| 2838 | F 6 |
| 2839 | E 6 |
| 2840 | E 5 |
| 2841 | D 6 |
| 2842 | D 5 |
| 2843 | C 3 |
| 2844 | D10 |
| 2845 | I12 |
| 2851 | G27 |
| 2852 | G27 |
| 2853 | H26 |
| 2855 | D17 |
| 2856 | D19 |
| 2857 | D16 |
| 2858 | D18 |
| 2859 | C20 |
| 2860 | C21 |
| 2861 | L23 |
| 2862 | D19 |
| 2865 | M26 |
| 2866 | M26 |
| 2867 | G21 |
| 2868 | G20 |
| 2870 | I28 |
| 2871 | K27 |
| 2872 | I27 |
| 2873 | K27 |
| 2874 | I27 |
| 2875 | K28 |
| 2876 | J28 |
| 2877 | K28 |
| 2878 | I28 |
| 2879 | N30 |
| 2880 | I30 |
| 2881 | K30 |
| 2901 | J19 |
| 2902 | I16 |
| 2903 | L22 |
| 2904 | M30 |
| 3801 | H 3 |
| 3802 | I 4 |
| 3803 | I 5 |
| 3804 | L 5 |
| 3805 | L 5 |
| 3806 | K10 |
| 3807 | J 9 |
| 3808 | J 9 |
| 3809 | J 9 |
| 3810 | G 3 |
| 3811 | G 3 |
| 3812 | F 5 |
| 3813 | F 4 |
| 3814 | F 4 |
| 3815 | F 3 |
| 3816 | F 4 |
| 3817 | F 2 |
| 3818 | F 2 |
| 3819 | E 5 |
| 3820 | J 5 |
| 3821 | E 4 |
| 3822 | E 4 |
| 3823 | K10 |
| 3824 | H16 |
| 3825 | G18 |
| 3826 | G18 |
| 3827 | F19 |
| 3828 | F19 |
| 3829 | D 2 |
| 3830 | C 3 |
| 3831 | F 9 |
| 3832 | F 9 |
| 3833 | E 6 |
| 3834 | D 6 |
| 3835 | D 5 |
| 3836 | D 6 |
| 3837 | D 5 |
| 3838 | C 5 |
| 3839 | B 3 |
| 3840 | B 3 |
| 3841 | C 4 |
| 3842 | B 3 |
| 3843 | D 4 |
| 3844 | D 1 |
| 3845 | C 1 |
| 3846 | C 2 |
| 3847 | C 3 |
| 3848 | C10 |
| 3849 | C10 |
| 3850 | C27 |
| 3851 | C21 |
| 3852 | D19 |
| 3853 | D17 |
| 3854 | G26 |
| 3855 | G27 |
| 3856 | K23 |
| 3857 | K24 |
| 3858 | K22 |
| 3859 | L22 |
| 3860 | L25 |
| 3863 | I11 |
| 3864 | D19 |
| 3865 | L27 |
| 3866 | G19 |
| 3867 | F20 |
| 3868 | G20 |
| 3869 | N28 |
| 3870 | H28 |
| 3871 | K27 |
| 3872 | J27 |
| 3873 | K28 |
| 3874 | I28 |
| 3875 | K28 |
| 3876 | I28 |
| 3877 | L27 |
| 3878 | J27 |
| 3879 | K28 |
| 3880 | I28 |
| 3881 | J29 |
| 3882 | J29 |
| 3883 | M30 |
| 3884 | N30 |
| 3886 | M29 |
| 3887 | N28 |
| 3888 | O28 |
| 3889 | J26 |
| 3901 | I16 |
| 3902 | I18 |
| 3903 | I18 |
| 3904 | J18 |
| 3905 | I19 |
| 3906 | I20 |
| 3907 | J20 |
| 3908 | J20 |
| 3911 | K21 |
| 3912 | K22 |
| 3913 | L21 |
| 3914 | M19 |
| 3915 | K19 |
| 3916 | K19 |
| 3917 | I12 |
| 3919 | K30 |
| 3920 | I30 |
| 3921 | K22 |
| 3922 | C21 |
| 3923 | B24 |
| 3924 | E20 |
| 3925 | E21 |
| 3926 | E21 |
| 3927 | F21 |
| 3928 | K16 |
| 5850 | H25 |
| 5851 | H12 |
| 5852 | M23 |
| 5853 | M24 |
| 5854 | L18 |
| 5855 | L18 |


RADIAL AMPLIFIER
7831a L272
7831b L272
RADIAL MOTOR
FOCUS AMPLIFIER
7832a L272
7832b L272
FOCUS ACTUATOR
RAD-
RAD+
FO+
FO-
FOCUS OFFSET
TO 1801/3
TO 1801/4
LASER
LASER CURRENT
7801 BD337/25
TO 1801/5
TO 1801/6
MONITOR
1810 DIODE ARRAY
COM4-MINI
TO 1801/2
TO 1801/1
7830 TDA8809T
TOP VIEW
RADIAL ERROR SIGNAL PROCESSOR
15 RAD OUT
16 RE IN
17 RE LAG
18 LAG
19 LEAD
20 VREF
21 AGC
22 RDAC
23 OFFSET IN
24 OFFSET OUT
25 CLPF
26 CHPF
27 RE1
28 RE2
VSS 14
VEXT- 13
VEXT+ 12
B0 11
B1 10
B2 9
B3 8
RE 7
DIV4 6
ROSC 5
RWOB 4
COSC2 3
COSC1 2
VDD 1
7810 TDA8808T
PHOTO DIODE SIGNAL PROCESSOR
15 FE
16 FELAG
17 LO
18 LM
19 GCLF
20 RE2
21 RE1
22 D2
23 D1
24 D3
25 D4
26 HF IN
27 VSS
28 DEC
LPF 14
VEXT 13
DOOS 12
TL 11
HFD 10
FOC START 9
BGC 8
BEQ 7
SI/RD 6
SC 5
DET 4
HF OUT 3
VDD 2
OCHF 1
7841 PC74HC02P
VCC
7840 COP880C
MICRO PROCESSOR
TOP VIEW
1 TL
2 DODS
3 SI/RD
4 CLK
5 NC
6 X OUT
7 X IN
8 +VCC
9 NC
10 NC
11 R2
12 R1
13 NC
14 REDIG
15 NC
16 NC
17 DAC 3
18 DAC 2
19 DAC 1
20 DAC 0
ORD 40
SCINT 39
SORD 38
SCL 37
TRAY-SW 36
INTERR 35
RESET 34
GND 33
TL INH18. 32
31
MOT1 30
MOT2 29
NC 28
MLA 27
MCL 26
MSD 25
RCS CLEAR 24
CS2 23
CS1 22
1BIT DAC 21
ENABLE LCD DRIVER
5851 8.4MHz
TRAY SWITCH
1813
7879 BC327/40
7880 BC548C
7878 BC337/40
7901 BC548C
7902 BC327/40
7903 BC327/40
7904 BC337/40
7905 BC337/40
7854 BC327/
1815
KEY MATRIX
TO CONTROL PART
FOR OTHER APPLICATION
1812
TRAY MOTOR M1
MOT. 1
MOT. 2
TRAY SW
70
LEGEND
⏊ = LF GND

| | |
|---|---|
| 2862 | D19 |
| 2865 | M26 |
| 2866 | M26 |
| 2867 | G21 |
| 2868 | G20 |
| 2870 | I28 |
| 2871 | K27 |
| 2872 | I27 |
| 2873 | K27 |
| 2874 | I27 |
| 2875 | K28 |
| 2876 | J28 |
| 2877 | K28 |
| 2878 | I28 |
| 2879 | N30 |
| 2880 | I30 |
| 2881 | K30 |
| 2901 | J19 |
| 2902 | I16 |
| 2903 | L22 |
| 2904 | M30 |
| 3801 | H 3 |
| 3802 | I 4 |
| 3803 | I 5 |
| 3804 | L 5 |
| 3805 | L 5 |
| 3806 | K10 |
| 3807 | J 9 |
| 3808 | J 9 |
| 3809 | J 9 |
| 3810 | G 3 |
| 3811 | G 3 |
| 3812 | F 5 |
| 3813 | F 4 |
| 3814 | F 4 |
| 3815 | F 3 |
| 3816 | F 4 |
| 3817 | F 2 |
| 3818 | F 2 |
| 3819 | E 5 |
| 3820 | J 5 |
| 3821 | E 4 |
| 3822 | E 4 |
| 3823 | K10 |
| 3824 | H16 |
| 3825 | G18 |
| 3826 | G18 |
| 3827 | F19 |
| 3828 | F19 |
| 3829 | D 2 |
| 3830 | C 3 |
| 3831 | F 9 |
| 3832 | F 9 |
| 3833 | E 6 |
| 3834 | D 6 |
| 3835 | D 5 |
| 3836 | D 6 |
| 3837 | D 5 |
| 3838 | C 5 |
| 3839 | B 3 |
| 3840 | B 3 |
| 3841 | C 4 |
| 3842 | B 3 |
| 3843 | D 4 |
| 3844 | D 1 |
| 3845 | C 1 |
| 3846 | C 2 |
| 3847 | C 3 |
| 3848 | C10 |
| 3849 | C10 |
| 3850 | C27 |
| 3851 | C21 |
| 3852 | D19 |
| 3853 | D17 |
| 3854 | G26 |
| 3855 | G27 |
| 3856 | K23 |
| 3857 | K24 |
| 3858 | K22 |
| 3859 | L22 |
| 3860 | L25 |
| 3863 | I11 |
| 3864 | D19 |
| 3865 | L27 |
| 3866 | G19 |
| 3867 | F20 |
| 3868 | G20 |
| 3869 | N28 |
| 3870 | H28 |
| 3871 | K27 |
| 3872 | J27 |
| 3873 | K28 |
| 3874 | I28 |
| 3875 | K28 |
| 3876 | I28 |
| 3877 | L27 |
| 3878 | J27 |
| 3879 | K28 |
| 3880 | I28 |
| 3881 | J29 |
| 3882 | J29 |
| 3883 | M30 |
| 3884 | N30 |
| 3886 | M29 |
| 3887 | N28 |
| 3888 | O28 |
| 3889 | J26 |
| 3901 | I16 |
| 3902 | I18 |
| 3903 | I18 |
| 3904 | J18 |
| 3905 | I19 |
| 3906 | I20 |
| 3907 | J20 |
| 3908 | J20 |
| 3911 | K21 |
| 3912 | K22 |
| 3913 | L21 |
| 3914 | M19 |
| 3915 | K19 |
| 3916 | K19 |
| 3917 | I12 |
| 3919 | K30 |
| 3920 | I30 |
| 3921 | K22 |
| 3922 | C21 |
| 3923 | B24 |
| 3924 | E20 |
| 3925 | E21 |
| 3926 | E21 |
| 3927 | F21 |
| 3928 | K16 |
| 5850 | H25 |
| 5851 | H12 |
| 5852 | M23 |
| 5853 | M24 |
| 5854 | L18 |
| 5855 | L18 |
| 5856 | L18 |
| 5857 | M18 |
| 5858 | M18 |
| 5859 | M18 |
| 5860 | M18 |
| 5861 | N18 |
| 5862 | K30 |
| 5863 | K30 |
| 5864 | I30 |
| 5865 | M30 |
| 5866 | L30 |
| 6810 | B23 |
| 6811 | E20 |
| 6812 | E20 |
| 6813 | E21 |
| 6814 | G21 |
| 6842 | J15 |
| 6843 | C10 |
| 6850 | L24 |
| 6851 | L23 |
| 6852 | G27 |
| 6853 | I17 |
| 6854 | H15 |
| 6870 | N28 |
| 6901 | I20 |
| 7600 | L29 |
| 7801 | H 4 |
| 7810 | J 6 |
| 7830 | D 8 |
| 7831a | C 2 |
| 7831b | C 4 |
| 7832a | E 3 |
| 7832b | E 3 |
| 7840 | I14 |
| 7841 | E12 |
| 7850 | D25 |
| 7851 | E28 |
| 7852 | I25 |
| 7853 | L23 |
| 7854 | M23 |
| 7855 | L24 |
| 7856 | M24 |
| 7870A | I27 |
| 7870B | J27 |
| 7871 | L28 |
| 7872 | J28 |
| 7873 | K29 |
| 7874 | I29 |
| 7875 | M30 |
| 7876 | N30 |
| 7877 | N29 |
| 7878 | G19 |
| 7879 | F20 |
| 7880 | G20 |
| 7901 | J19 |
| 7902 | L20 |
| 7903 | L21 |
| 7904 | L20 |
| 7905 | L21 |
| 8801 | I 3 |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29
30
31
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
7830
TDA8809T
TOP VIEW
VSS 14
VEXT- 13
VEXT+ 12
B0 11
B1 10
B2 9
B3 8
RE 7
DIV4 6
RDSC 5
RWOB 4
COSC2 3
COSC1 2
VDD 1
DIAL ERROR
L PROCESSOR
LPF 14
VEXT 13
DODS 12
TL 11
HFD 10
FOC 9
START
BGC 8
BEO 7
SI/RO 6
SC 5
DET 4
HF OUT 3
VDD 2
DCHF 1
7810
TDA8808T
TOP VIEW
HOTO DIODE
AL PROCESSOR
3848
4R7
6843
1N4148
3849
150E
2831
47N
2844
100U/10V
3831
47K
3832
15K
2833
8N2
2834
8N2
3809
5K6
3808
24K
3807
12K
2815
2N2
2807
47U/16V
2812
220N
2810
1N
3806
1K
3823
2K7
2808
47N
2809
47N
7841
PC74HC02P
VCC
5851
8.46MHz
2845
47N
3863
22K
3917
22K
7840
COP880C
MICRO PROCESSOR
TOP VIEW
1 TL
2 DODS
3 SI/RO
4 CLK
5 NC
6 X OUT
7 X IN
8 +VCC
9 NC
10 NC
11 R2
12 R1
13 NC
14 REDIG
15 NC
16 NC
17 DAC 3
18 DAC 2
19 DAC 1
20 DAC 0
DRO 40
SCINT 39
SORD 38
SCL 37
TRAY-SW 36
INTERR 35
RESET 34
GND 33
TL INH18. 32
3BIT DAC 31
MOT1 30
MOT2 29
NC 28
MLA 27
MCL 26
MSD 25
RCS CLEAR 24
CS2 23
CS1 22
18IT DAC 21
ENABLE
LCD
DRIVER
6854
1N4148
3824
22K
1813
TRAY SWITCH
3901
470K
2902
2N2
6842
1N4148
3928
22K
6853
1N4148
5854
5855
5856
5857
5858
5859
5860
5861
2MU2
1815
KEY MATRIX
TO CONTROL PART
MOT. 1
MOT. 2
TRAY SW
70
FOR OTHER APPLICATION
LEGEND
= LF GND
281
2859
100U/16V
2860
22N
3851
100K
3922
4R7
+5D
+5C
2856
10N
3864
1K5
3852
22K
2858
2N2
2862
47P
2857
470P
3853
2K2
2855
100N
3924
10K
3925
10K
3926
10K
6811
1N4148
6812
1N4148
6813
1N4148
3829
220E
3825
3K3
3827
100E
3826
2K2
7878
BC337/40
7879
BC327/40
7880
BC548C
3866
2K2
3867
1K
3868
220E
2868
2MU2
3927
47K
6814
1N4148
2867
2MU2
3902
1K2
3903
33K
3905
47K
3906
5K6
6901
1N4148
3907
33K
7901
BC548C
3904
270E
2901
6-8
3900
10K
6810
1N4148
3923
10K
7850
M50432
BOTTOM VIEW
DECODER
25 SCINT
24 DRD
23 VDD2
22 SYCLK
21 LOCKIDRO
20 LPF
19 TLC
18 IREF
17 HF
16 HFD
15 ACLR
14 MLA
13 MCK
12 MSP
11 DASEL4
10 DASEL3
9 DASEL2
8 DASEL1
7 DOBSEL
6 TESTI
5 ACRCY
4 DOTX
3 PWM2
2 PWM1
1 EMP
SBCQ 41
SBCP 42
RAS 43
NC 44
RDB2 45
NC 46
RDB1 47
RDB4 48
CAS 49
WE 51
NC 52
EST2 61
EST1 62
VDD1 63
C846 64
LRCK L/R
DSCK
VSS1
DOI DATA
X0
X1
SORD
SCK
VSS2
SDCE2
SDCE1
5850
8.46MHz
3950
4R7
7851
MM4264
RAM
TOP VIEW
3854
1K
2851
22N
2852
100N
2853
10U/63V
3855
2M2
6852
1N4148
7852
TDA1543A
DAC
2.5V
7870A
NJM4560
7870B
NJM4560
3870
100E
2870
220U/16V
2874
1MU
3876
1K
3874
47K
3880
470E
2878
3N3
2872
1N5
3872
2K2
3889
12K
3878
10K
2876
33N
2873
1MU
3875
1K
3873
47K
3879
470E
2877
3N3
2871
1N5
3871
2K2
3877
10K
2875
33N
7874
BC548
7872
BC548
7873
BC548
7871
BC548
MUTE
3920
4K7
5864
2MU2
2880
470P
94
RIGHT
1816
3919
4K7
5863
2MU2
2881
470P
95
LEFT
5862
2MU2
3882
1K
3881
1K
3865
4R7
7600
LM2940CT
5866
U22
5865
U22
2880
2200U
2884
220P
2866
47N
2865
220U/16V
2881
47U/25V
3883
22K
7875
BC558
3884
22K
3869
47K
3886
4K7
7876
BC548
7877
BC548
6870
5V1
3887
4K7
3888
330E
2879
22U/25V
7902
BC327/40
7903
BC327/40
7904
BC337/40
7905
BC337/40
3915
2K2
3916
2K2
3911
2K2
3912
1K5
3921
470E
3914
560E
3913
560E
2903
100U/16V
1812
TRAY MOTOR
M1
7853
BC337/40
7855
BC337/40
7854
BC327/40
7856
BC327/40
3858
1K0
3856
4E7
3857
100E
3859
100E
3860
100E
6851
1N4148
6850
1N4148
2861
100U/6V5
5852
2MU2
5853
2MU2
1811
M

# Service Information

1992 - 09 - 16

FW2010, FW2014 and FW2015 families

A92 - 172

**Product Service Group CE Audio**

Due **Service manual errors** the following must be corrected.

FW2010/20/25 (4822 725 23195)
Pos 599 should be 4822 361 21498
L300 should be 4822 157 52748 Coil 10µH
D108 should be 4822 130 82842 SLR-55VC3F
IC302 should be 4822 209 82569 µPD4066BC
LD600 and LD800 should be diodes instead of coil

FW2010/21 (4822 725 23196)
Pos 599 should be 4822 361 21498
L300 should be 4822 157 52748 Coil 10µH
D108 should be 4822 130 82842 SLR-55VC3F
IC302 should be 4822 209 82569 µPD4066BC
D109 4822 130 80992 1SS270 is missing
Q134 4822 130 42834 2SK246-GR is missing
D500 should be a safety item
LD600 and LD800 should be diodes instead of coil
Q507 and Q508 should be transistor instead of IC
TC800 should be cap, trimmer instead of Miscellaneous

FW2014/20 (4822 725 23181)
IC302 should be 4822 209 82569 µPD4066BC

FW2014/21 (4822 725 23197)
IC302 should be 4822 209 82569 µPD4066BC
IP601 4822 070 31002 Fuse T1A 250V is missing

FW2014/22 (4822 725 23182)
IC302 should be 4822 209 82569 µPD4066BC

FW2015/20/25/30 (4822 725 23127)
VR1 4822 100 11568 Trimmer 5k is missing
D2 4822 130 81336 1SS131 is missing
IC613 should be 4822 209 63179 NJM7905FA
LD800 - LD803 should be 5322 130 34957 TLR123

FW2015/21 (4822 725 23175)
109A should be the leaf switch 109 of the Rec/pb deck
Assy 602 + 644 should be 4822 361 21498
S450 4822 273 10231 voltage selector
D2 4822 130 81336 1SS131 is missing
Delete D458
IC613 should be 4822 209 63179 NJM7905FA
LD800 - LD803 should be 5322 130 34957 TLR123

FW2015/22 (4822 725 23176)
109A should be the leaf switch 109 of the Rec/pb deck
Assy 602 + 644 should be 4822 361 21498
D2 4822 130 81336 1SS131 is missing
D10 4822 130 34167 RD6.2JSB1
Delete D458
IC613 should be 4822 209 63179 NJM7905FA
LD800 - LD803 should be 5322 130 34957 TLR123

FW2015/39 (4822 725 24233)
109A should be the leaf switch 109 of the Rec/pb deck
Assy 602 + 644 should be 4822 361 21498
IP601 4822 252 20291 Fuse ICP-N10 is missing
D2 4822 130 81336 1SS131 is missing
D10 4822 130 34167 RD6.2JSB1
D450 and D451 should be 4822 130 82776 W02M
IC613 should be 4822 209 63179 NJM7905FA

FW2010 and FW2014 families

To solve **No TOC problem and squeaking noise during CD playing** do the following:
change R311 from 150kΩ to 220kΩ
and re-adjust the focus offset.

**Focus offset adjustment**

| CD part | Measure across | Adjust with | Scope | Adjust for |
|---|---|---|---|---|
| Play | TP300 | VR301 | Eye pattern | ≤ 200mV |

Note: TP300 = Across IC300 pin 2 and ground

To improve **ESD** add diode D812 1SS133 4822 130 32778 and capacitor C811 0.1µF as shown in figure 1.

Due to **Supply problem a new CD Mechanism with Sony light-pen** was used during production. The old and new mechanism can be recognized by the shape of the light pen as shown in figure 3. Therefores, the following changes are introduce:

**Electronics:**

| | |
|---|---|
| Change | R308 from 10kΩ to 1kΩ; |
| | R311 from 150kΩ to 220kΩ; |
| | R314 from 120kΩ to 150kΩ; |
| | R315 from 220kΩ to 100kΩ; |
| | R319 from 150kΩ to 200kΩ; |
| | R320 from 6.8kΩ to 10kΩ; |
| | R322 from 33kΩ to 39kΩ; |
| | R324 from 150kΩ to 180kΩ; |
| Delete | C309 2200pF. |

**Mechanical:**

| | |
|---|---|
| Delete | 533 (Old Seban mechanism) |
| Change | 537 to 4822 492 70956 |
| | 538 to 4822 532 52505 |
| | 539 to 4822 532 12081 |
| | 540 with a new piece (if damage) |
| Add | 598 4822 691 20781 (New Sony mechanism) |
| | 565 Screw D2 x 4 to mount 537 - 540 together. |

A new exploded view of the New CD Mechanism is shown in figure 2.

For failure of **sets with the Sony laser** it is also possible to replace the light-pen (Pos 562) itself. The service code in this case is 4822 691 30282.

After replacement of complete mechanism or light-pen it is necessary to re-adjust the electronics to match the mechanism.

Due to **error in CD schematic diagram** the following needs to be corrected as per figure 4.

Read
Q301 as Q307
Q302 as Q308
Q303 as Q305
Q304 as Q306
Q305 as Q303
Q306 as Q304
Q307 as Q301
Q308 as Q302

FW2014 family

If DSP is switch on, a **beeping sound is audible**. This beeping sound is audible if the display in ON. If the clock is not set, the display is flashing. The rhythm of the beeping sound is equal to the rhythm of the flashing of the display.

This problem is resolved by adding a shield plate (aluminum foil) above the display board and lug washer wire to ground it to the display board as shown in figure 5 and 6.

SCHEMATIC DIAGRAM, SYSTEM

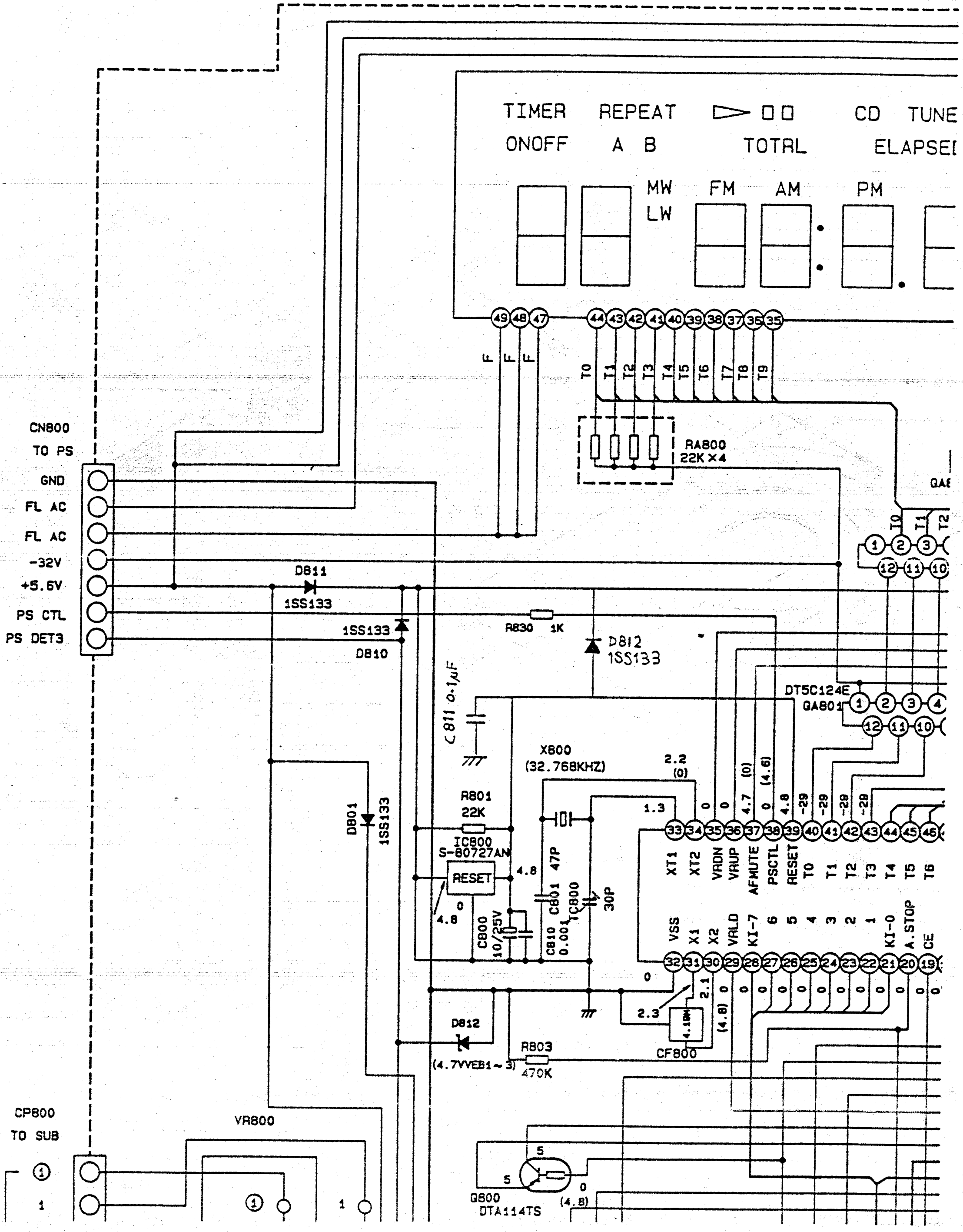
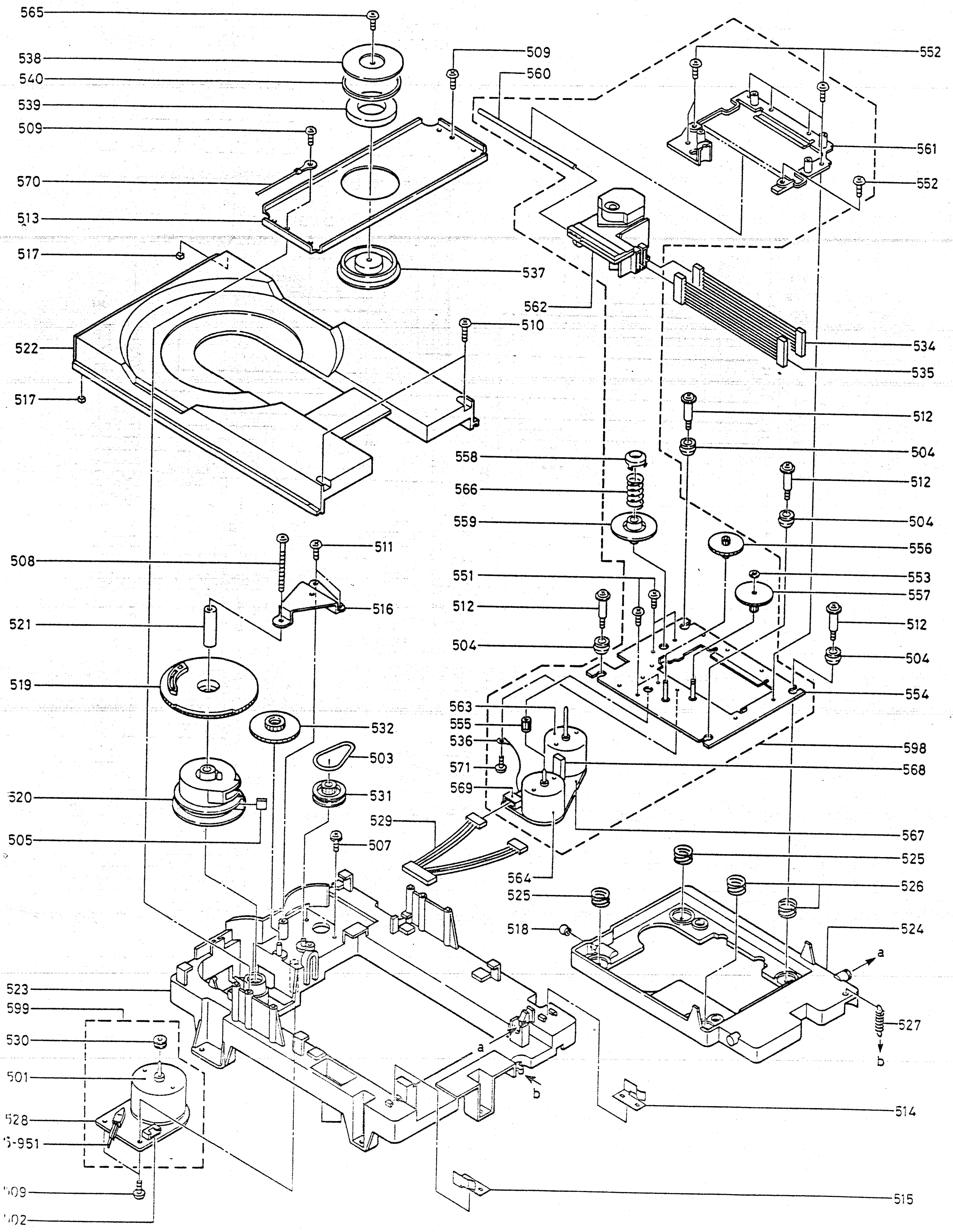

TIMER ONOFF
REPEAT A B
TOTRL
CD
TUNE
ELAPSE
MW LW
FM
AM
PM
F F F
T0 T1 T2 T3 T4 T5 T6 T7 T8 T9
RA800 22K×4
CN800 TO PS
GND
FL AC
FL AC
-32V
+5.6V
PS CTL
PS DET3
D811 1SS133
1SS133 D810
R830 1K
D812 1SS133
C811 0.1µF
DT5C124E QA801
X800 (32.768KHZ)
R801 22K
IC800 S-80727AN
RESET
C800 10/25V
C810 0.001
C801 47P
TC800 30P
D801 1SS133
D812 (4.7VVEB1~3)
R803 470K
CF800
Q800 DTA114TS
CP800 TO SUB
VR800
XT1 XT2 VRDN VRUP AFMUTE PSCTL RESET T0 T1 T2 T3 T4 T5 T6
VSS X1 X2 VRLD KI-7 6 5 4 3 2 1 KI-0 A.STOP CE

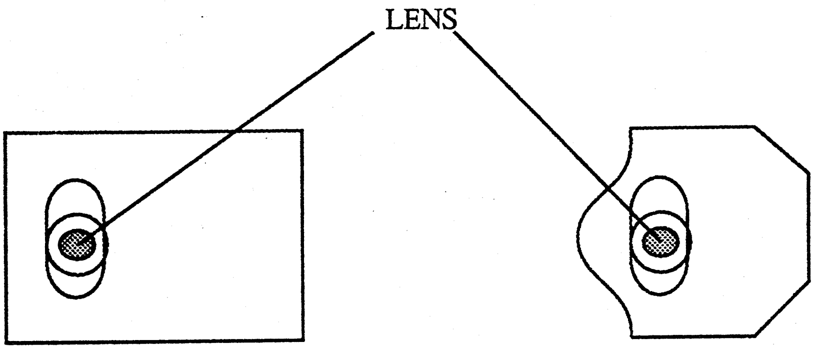
Figure 1

# CD MECHANISM UNIT EXPLODED VIEW


565
538
540
539
509
509
560
570
513
517
552
561
552
537
562
522
510
517
534
535
512
504
558
566
559
512
504
556
508
511
551
553
557
521
516
512
504
512
504
519
554
563
555
532
536
503
598
571
568
569
520
531
505
529
507
567
525
526
564
525
518
524
a
523
599
527
530
a
b
501
b
514
528
5-951
509
515
502

1602-050-1

Figure 2



Seban Laser pen of
Old CD mechanism

Sony Laser pen of
New CD mechanism

Figure 3

SCHEMATIC DIAGRAM, CD

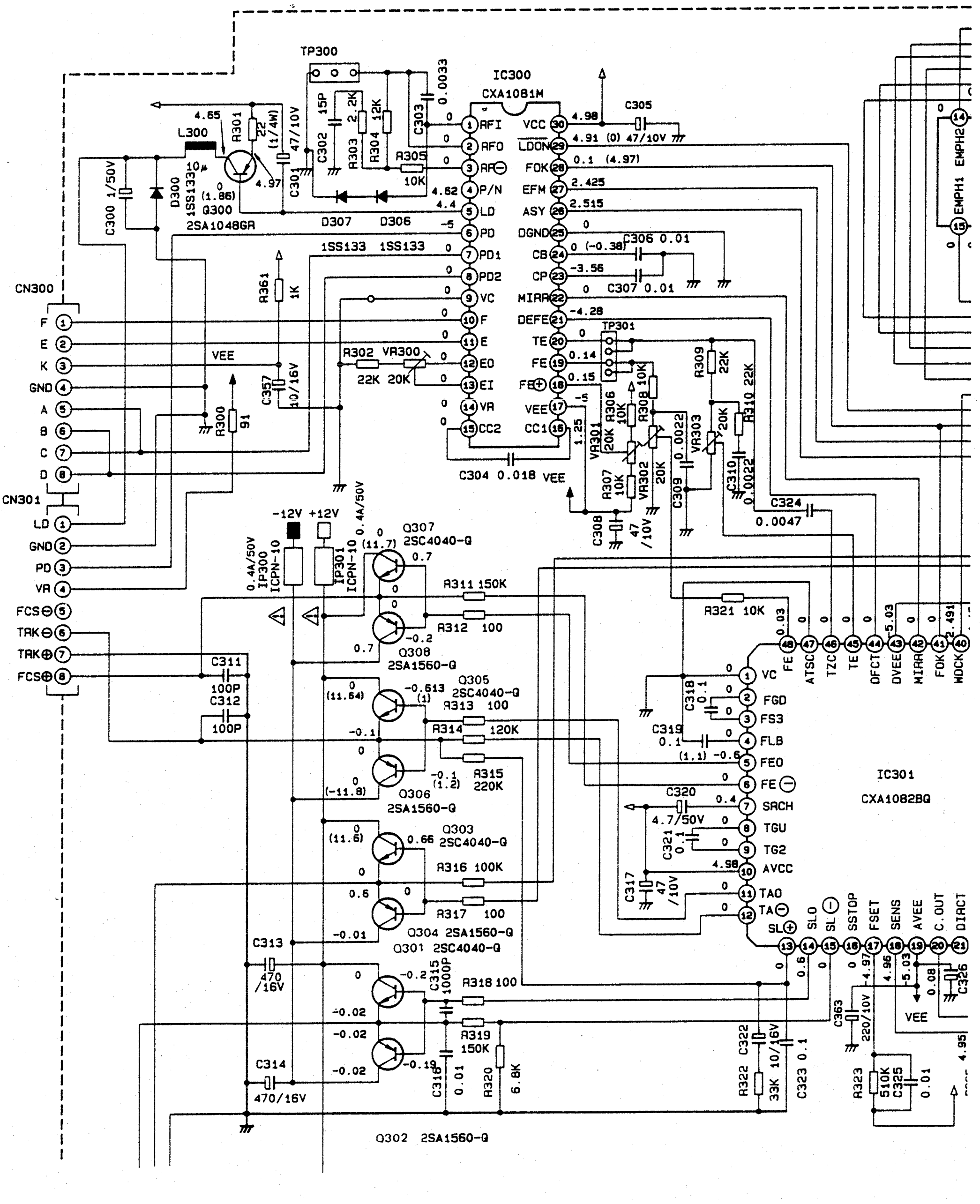

TP300
IC300
CXA1081M
RFI
RFO
RF⊖
P/N
LD
PD
PD1
PD2
VC
F
E
EO
EI
VR
CC2
VCC
LDON
FOK
EFM
ASY
DGND
CB
CP
MIRR
DEFE
TE
FE
FE⊕
VEE
CC1
TP301
C305
47/10V
C306 0.01
C307 0.01
C304 0.018
VEE
L300
10μ
R301
22
(1/4W)
47/10V
C301
C302
15P
R303 2.2K
R304 12K
R305 10K
C303 0.0033
D300 1SS133
Q300 2SA1048GR
C300 1/50V
D307
D306
1SS133
1SS133
R361 1K
C357 10/16V
R300 91
R302 22K
VR300 20K
CN300
F
E
K
GND
A
B
C
D
CN301
LD
GND
PD
VR
FCS⊖
TRK⊖
TRK⊕
FCS⊕
VEE
R306 10K
VR301 20K
R307 10K
VR302 20K
R308 10K
C308 47/10V
C309 0.0022
VR303 20K
R309 22K
R310 22K
C310 0.0022
C324 0.0047
-12V
+12V
IP300 ICPN-10 0.4A/50V
IP301 ICPN-10 0.4A/50V
Q307 2SC4040-Q
Q308 2SA1560-Q
Q305 2SC4040-Q
Q306 2SA1560-Q
Q303 2SC4040-Q
Q304 2SA1560-Q
Q301 2SC4040-Q
Q302 2SA1560-Q
R311 150K
R312 100
R313 100
R314 120K
R315 220K
R316 100K
R317 100
R318 100
R319 150K
R320 6.8K
R321 10K
R322 33K
R323 510K
C311 100P
C312 100P
C313 470/16V
C314 470/16V
C315 1000P
C316 0.01
C317 47/10V
C318 0.1
C319 0.1
C320 4.7/50V
C321 0.1
C322 10/16V
C323 0.1
C325 0.01
C326
C363 220/10V
IC301
CXA1082BQ
VC
FGD
FS3
FLB
FEO
FE⊖
SRCH
TGU
TG2
AVCC
TAO
TA⊖
SL⊕
SLO
SL⊖
SSTOP
FSET
SENS
AVEE
C.OUT
DIRCT
FE
ATSC
TZC
TE
DFCT
DVEE
MIRR
FOK
MDCK
EMPH1
EMPH2

Figure 4

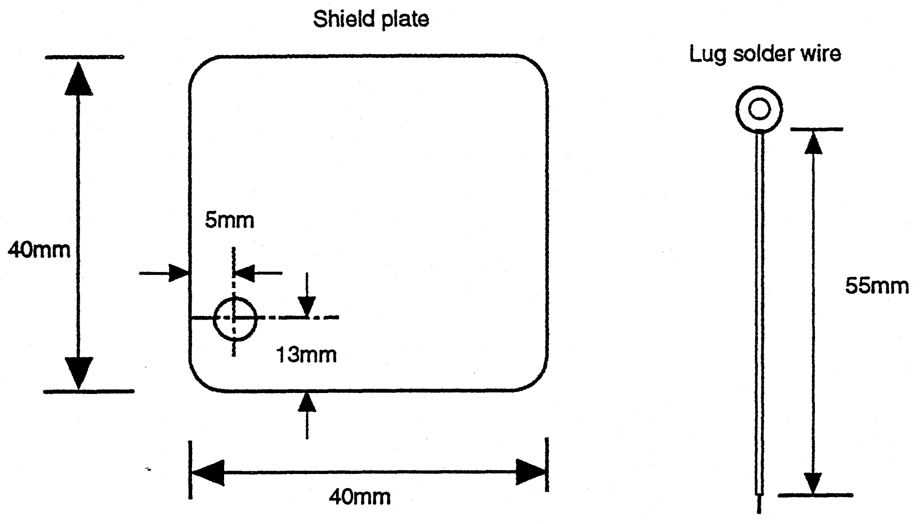

Shield plate
40mm
5mm
13mm
40mm
Lug solder wire
55mm

Figure 5

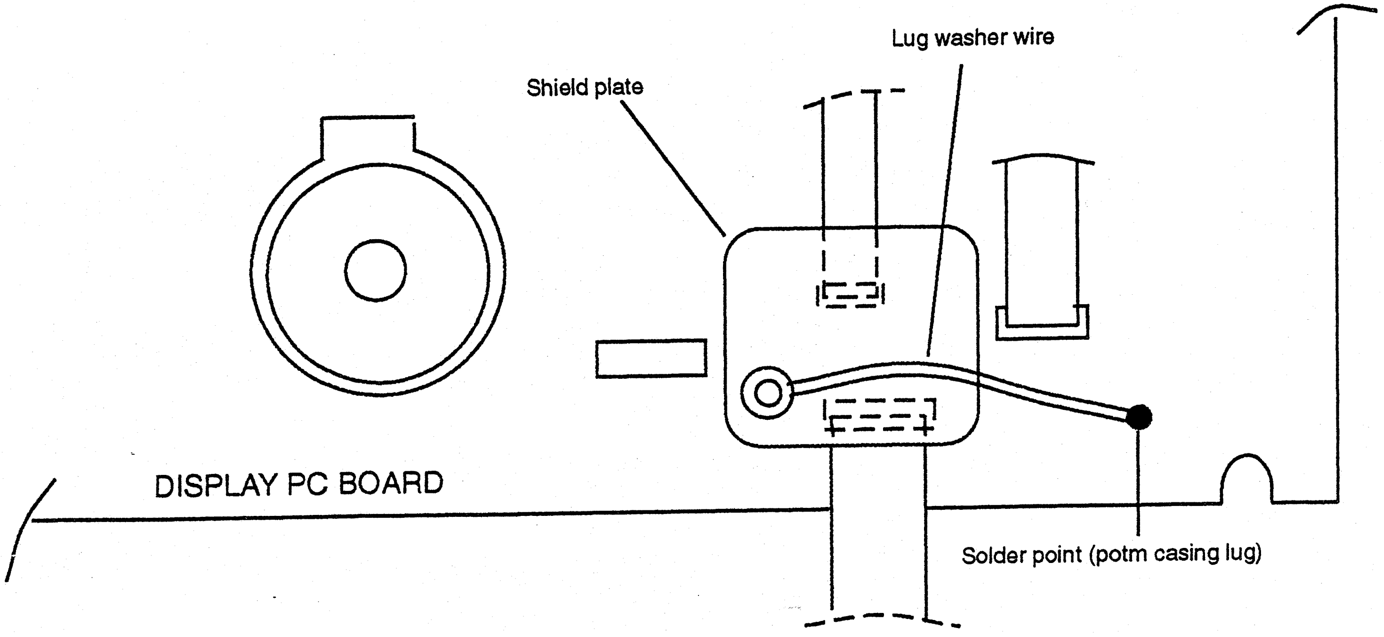

Lug washer wire
Shield plate
DISPLAY PC BOARD
Solder point (potm casing lug)

Figure 6